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Volume XLVII JULY, 1925 Number Seven

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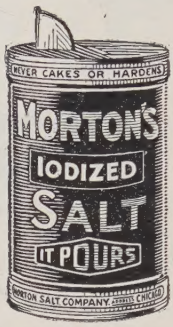

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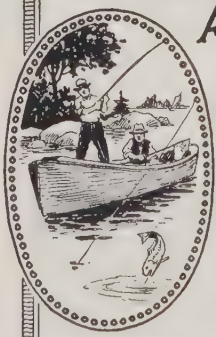

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   Zinc Stearate ..... 200 parts
   Mix. Triturate well.

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The
Chicago Medical Recorder

Official Journal
of
The American Association for the Study of Goiter

Vol. XLVII JULY, 1925 No. 7

ORIGINAL ARTICLES

Goiter and the Internist*

By Israel Bram, M.D., Philadelphia

Despite recent advances in our knowledge of the physiology and diseases of the thyroid, the prophylaxis and treatment of some types of goiter are still unsatisfactory. There are three existing obstacles, the removal of which would mean a tremendous step forward in efforts toward the prevention and treatment of goiter: (1) Lack of a working classification of goiter; (2) the undue popularity of iodin in treatment; and (3) hasty conclusions in general therapeutic management.

The purpose of this communication is to present what I believe to be the means of eliminating these eradicable obstacles, my views being based upon a series of over nine thousand goiter cases personally observed during a period of fifteen years.

1. A working classification of goiter

Of the many classifications employed in the discrimination of goiter the *pathological* and the *clinical* are the most popular. Post-mortem findings are a court of last resort, but the general practitioner requires a means of discrimination in the living subject and has had to depend upon the clinical classification. This divides goiters into two types—toxic and nontoxic, with pathological varieties under each. This classification lacks considerably in therapeutic implications, an attribute highly desirable to the busy clinician. For some years I have been employing what I term the *therapeutic* classification (1) of goiter, in which thyroid enlargements are classified into two groups (a) nonsurgical, and (b) surgical. This classification may be stated as follows:

(a) Nonsurgical Goiter:
1. Simple hypertrophy.
2. Colloid goiter.
3. Puberty hyperplasia.
4. Exophthalmic goiter (Graves' Disease).

*Address before the American Association for the Study of Goiter at its annual meeting at Bloomington, Ill., January 29, 1925.

(b) Surgical Goiter, embracing adenomata (simple and toxic), cystic goiter, and all other forms of goiter not mentioned under nonsurgical goiter.

From a pathological viewpoint it will be observed that nonsurgical goiters are unencapsulated, while the common types of surgical goiter are encapsulated. Barring malignant disease and thyroiditis, unencapsulated goiters are amenable to appropriate nonsurgical methods of treatment. Of course, if a thyroid mass causes pressure symptoms through being intrathoracically located, or if it is located at the base of the tongue, surgery is indicated, irrespective of the type of growth. But these are the exceptions which prove the rule; we are here discussing goiters located in the usual position above the thorax. In further elaboration of therapeutic classification of goiter, the following tabulation (2) may be of service:

SURGICAL GOITER

1. Usually exists in established adult life.

2. Usually of at least five years' to twenty or more years' duration.

3. Often very large, occasionally intrathoracic, frequently asymmetrical.

4. Genuinely neoplastic and adventitious.

5. Encapsulated, except diffuse adenomatosis, infections and malignant types.

6. Resistant and often nodular to the touch; thrill rare.

7. Bruit rare.

8. Thyroidectomy is complete and satisfactory in non-malignant types; nonoperative treatment a failure.

NONSURGICAL GOITER

1. Usually occurs during childhood, preadult or early adult life.

2. Duration varies from several weeks to several years.

3. Rarely very large or intrathoracic, usually symmetrical.

4. Not genuinely neoplastic or adventitious, but usually a compensatory reaction.

5. Not encapsulated.

6. Usually yielding and diffuse to the touch, thrill characteristic of hyperplastic type. A growing colloid goiter may offer resistance on palpation.

7. Bruit nearly always present in hyperplasia of exophthalmic goiter.

8. Nonoperative treatment properly applied by the equipped internist yields recovery; surgical treatment erroneous and generally a failure.

It can readily be seen that the therapeutic classification is one which best conserves the interest of patients by reducing the likelihood of erroneous thyroidectomies.

2. THE UNDUE POPULARITY OF IODIN IN TREATMENT

The question of iodin in the treatment of goiter is one that should be solved at once, else greater confusion than ever will prevail. When we take into account the fact that there are probably five million persons in this country alone suffering with goiter of varying severity, the tremendous importance of this question is apparent. The profession and the laity, fed up on numerous articles in medical journals and popular magazines and newspapers, are almost satiated with information, correct and otherwise, on this subject. The public is made to believe that iodin is the best substance in existence in the management of goiter, a notion which has led many busy practitioners to indiscriminate iodin therapy with consequent harm to a large percentage of individuals. Patients suffering with goiter have become almost addicted to the use of iodin through self-drugging, with harm yet untold. The wave of

iodin popularity is so overwhelming as to overshadow the warnings in recent articles (3), (4), (5), (6), (7), (8), from the pens of competent observers against the abuse of this drug.

At bottom, the situation amounts to lack of discrimination between *endemic* and *sporadic* simple goiter. There is probably no doubt that thyroid enlargements constantly present in certain regions because of geographical peculiarities, are due, in this country, at least, to a deficiency of iodin in the air, food or water, and that to supply this deficiency is the rational method of procedure in prophylaxis and treatment. But the claim without qualification that iodin is useful in the treatment of *goiter,* is only partially true. *Sporadic* goiter, *i. e.,* thyroid enlargements not due to geographical conditions, is *not* due to iodin deficiency, but the physiological and pathological causes of complex nature, as for example, the changes incident to puberty, adolescence, pregnancy, the menopause, heredity, focal and general infections, abnormal quantity or quality of food, unhygienic conditions, undue physical and mental strain, and other known and unknown factors. How can iodin be expected to prevent or cure *these* goiters? Of the comparatively small percentage of patients helped by iodin therapy it may be assumed that their habits of life, especially dietary habits, are such as approximate in effects upon the body those conditions peculiar to geographical deficiencies. A few individuals may be so constructed as to require a greater quantity of iodin for the performance of bodily functions than all the rest of humanity and for that reason develop thyroid enlargement in the presence of an intake of what would ordinarily be considered a normal quantity of iodin. These individuals, though not living in endemic goiter districts, present scattered cases of *pseudo-endemic* goiter, the prevention and treatment of which should be based upon iodin therapy. On the other hand, not all cases of hypertrophic thyroid or colloid goiter occurring in endemic regions are endemic goiters. Indeed, judging from reports of harm wrought by iodin therapy of goiter in these sections, it would seem that a considerable percentage seen in Switzerland, France, and in our own country about the Great Lakes and in the Northwestern States are due to causes enumerated under sporadic goiter, and as such are not generally amenable to but often aggravated by the administration of iodin.

The time has come to sound a universal note of warning to the effect that iodin is a potent drug, to be employed where distinctly indicated, but if indiscriminately used, small goiters may become larger and simple goiters toxic, under its influence.

3. HASTY CONCLUSIONS IN GENERAL THERAPEUTIC MANAGEMENT

We cannot dismiss the iodin question without a word on the current popularity of Lugol's solution in the treatment of exophthalmic goiter. My own experience with iodin in this disease began fifteen years ago, when a patient severely ill and in a state of almost complete cardiac collapse was restored to complete recovery within a year by large doses of sodium iodid. This man has since been enjoying perfect health. An abundance of subsequent experience has, however, led me to the conclusion that iodin is, as Sajous (9) has recently remarked, "a two-edged sword, with its sharpest edge menacingly turned toward the patient at every turn." While the internist may find the drug of temporary use in a small percentage of these patients and while surgeons may find Lugol's solution of assistance in preparation of their patients for the knife, iodin is, in

the majority of Graves' disease patients, incapable of substantial benefit and is capable in many instances of precipitating a dangerous crisis. I have this year seen five patients in whom iodin administration produced such increased swelling of the thyroid as to give rise to dangerous pressure symptoms and the need for emergency surgery on that account.

The conclusions that thyroidectomy is the best treatment for exophthalmic goiter, or that x-ray treatment is the best mode of procedure, or that medical treatment is incapable of tangible results, are likewise hasty and erroneous. Let us at the outset state that exophthalmic goiter† is not primarily a disease of the thyroid gland. It may be defined as a *dysfunction of the entire chain of endocrine organs and of the vegetative nervous system, characterized by increased catabolism, afebrile heart hurry, tremor, dermographia, emotional disturbances, weakness, loss of weight, a relative immunity to cinchonism, and usually also by exophthalmos and hyperplastic swelling of the thyroid.* If Graves' disease is not a disease of the thyroid gland, it is therefore not due to hyperthyroidism. The victim of this disease is a sufferer from a widespread or constitutional affection and is no more a case of goiter than is a sufferer from typhoid fever a case of splenomegaly. Though hyperthyroidism may exist as part of the observed symptomatology, this is merely one link in the chain of events constituting the syndrome of Graves' disease.

Hence it is that such treatment as thyroidectomy or roentgenotherapy attacking the thyroid gland in efforts at cure, *may* result in some temporary relief from a mere *constituent* of the syndrome, the thyroid hyperactivity. This is not worth while, as thyroid hyperfunction (or is it dysfunction?) is a natural reaction following, not preceding, other events occurring elsewhere in the body. In other words, surgeons and roentgenologists attack the tail end of the affection, and what is more, they attack an ally, not an enemy, in their efforts to reduce the compensatory thyroid hyperplasia. This, in brief, is the reason why surgeons and roentgenologists are incapable of presenting convincing proof of their ability to affect *permanent, complete* cure of undoubted Graves' disease by their modes of procedure.

On the other hand, why does medical treatment so often fail in the management of certain types of nonencapsulated goiter, especially Graves' disease?‡ In the words of a well known surgeon, (10) "If medical treatment were so capable of assisting these patients, why do they send them to us for operation?" The answer is not far to seek. The medical man is fascinated by favorable surgical *statistics* and the fact that thyroidectomy removes the lump on the neck, which in itself exerts a wonderful psychic influence on all concerned. The busy internist is likewise handicapped by the notion that a subject of Graves' disease should be "put to bed" or "hospitalized" and given Lugol's solution. If this procedure fails, there is but one recourse, the roentgenologist, and if x-rays fail, the patient is soon scheduled for thyroidectomy. Unless the patient is suffering with a badly dilated heart with leaking valves, hospitalization is contraindicated in the disease, as it rests neither body nor mind. The administration of Lugol's solution is likewise contraindicated as a mainstay in treatment. Under the circumstances, and not having seen the number of post-op-

†Here we are not discussing *toxic adenoma*, a condition requiring thyroidectomy and in which surgery obtains brilliant results.

‡Rightly speaking, were Graves' disease removed from the classification of *goiter* and regarded as a constitutional affection, and were the term exophthalmic goiter made obsolete, the problem would cease to be so complex.

erative recurrences and crises that appear in the office or clinic of the goiter specialist, is it not natural for the average internist to steer his patient into the operating room? The difficulty here has been that the term "medical treatment" was made synonymous with hospitalization and the administration of iodin or of quinine. This definition of the term is not only worthless but harmful, hindering progress to a far greater extent than any other factor in the consideration of the treatment of this disease.

Surgeons should show less haste and internists more patience in the management of these unfortunates. Heretofore, both the surgeon and internist have shown a tendency to expect immediate results and to draw their deductions and statistics from measures according to whether or not *prompt* improvement was manifested. Distal permanent results and complete recovery were forgotten in the haste for a quick, though temporary reduction in pulse rate and basal metabolism and the cutting away of the "lump," and when "cases" were followed up, the statement of the patient through the mails was accepted as reliable. Personal contact with the patient for a few years was unusual, and when this occurred results were not as expected. Information was lacking from patients in a state of extreme invalidism, those suffering with myxedema, and those dead of the disease.

It is the dormant attitude of the internist that is responsible for thyroidectomy in Graves' disease. The internist may succeed in curing his average case of simple hypertrophy, colloid goiter, or even puberty hyperplasia without undue difficulty. But the management of a patient suffering with exophthalmic goiter is a task replete with physical, mental, and even sociological, to say nothing of economical difficulties. Those of us who have learned virtually to suffer with these patients are convinced that the mere reduction of the structure and function of the thyroid gland is at best a palliative procedure—that recovery can only be achieved through a broad therapeutic approach, expertly applied during a sufficient period of time to effect recovery and safeguard the individual against relapse.

It is not clinical cure that gives to surgery its present position in the therapeusis of exophthalmic goiter; it is the scarcity of understanding internists. This is an age of particularization. Specialization is still in the making, is seeking to eliminate the term "incurable" from the vocabulary of the medical profession. Exophthalmic goiter is quantitively and qualitively as difficult a subject, presenting problems as many and as grave, requiring as much training and skill, as any specialty extant. With the development of a sufficient number of such clinicians, scientists capable of ferreting out all predisposing and exciting etiological elements in a given subject of Graves' disease, irrespective of the time and pains involved—who can apply the necessary remedial measures whether they be prophylactic, dietic, hygienic, medicinal, electrotherapeutic, psychotherapeutic, in appropriate combination as indicated, after a careful individualizing analysis—in brief, with the appearance of an adequate number of internists who can virtually understand and speak the language of subjects of Graves' disease, there will be a cessation of surgical interference in this affection. It is then that conditions will become reversed and *surgeons will turn their patients over to the internist.* It is interesting to note, in this connection the plaint made to Robert McCarrison (11) by a foremost English thyroid surgeon: "I wish there were more

physicians who would undertake the treatment of these cases. If there were, fewer would need to be sent to the surgeon."

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Complications Incident to the Operative Treatment of Simple Goiter

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The causes, the prevention and the treatment of the operative and postoperative accidents incident to the surgical treatment of simple goiter are well worthy of study.

Goiters associated with hyperthyroidism, primary or secondary, the various types of suppurative and malignant neoplastic diseases of the thyroid gland differ so much from simple goiter in etiology, pathology, clinical manifestations and therapeutic indications that they are outside of the scope of this paper. Aberrant goiters, cervical, lingual, endothoracic, etc., presenting additional and special dangers by virtue of their anatomical relationships, are likewise excluded.

A simple goiter may, at any time, become the seat of: (a) Hemorrhage. This may lead to a sudden and marked increase in the volume of the goiter, to cyst-formation or to extravasation of blood into the paratracheal, mediastinal and other neighboring regions. Any of these conditions, singly or collectively, can determine tracheal compression, obstructive dyspnea[1, 19] and necessitate immediate surgical relief. (b) Abscess formation or diffuse suppuration. This may occur in the course of or after any of the infectious diseases; it may occur in the absence of any other evident constitutional disturbance.[2] The advent of infection increases the pressure symptoms. (c) Malignant disease[3]: sarcomatous or carcinomatous. Malignant disease occurs more frequently in goitrous than in normal thyroid glands.[3b] (d) Degenerative structural changes, provocative of hyperthyroidism, hypothyroidism or dysthyroidism.[4] (e) Inflammation. The processes of degeneration present in goiters lower the local tissue resistance and predispose to inflammation. The swelling inherent to inflammatory neoplastic and other degenerative processes of the thyroid gland exerts nefarious pressure on the trachea and esopha-

gus. The severity of this pressure is determined largely by the size and location of the swelling, tumor or cyst.

The operative removal of goiters eliminates these potential dangers and has further advantages. It can and should be strongly emphasized that intraglandular enucleation and subtotal thyroidectomy each, give extremely good immediate and remote functional results. The trachea is freed from all abnormal pressure. Many of the disturbances of phonation and respiration occurring immediately after operation are temporary, normal function being restored in from a few days to several weeks. Operations for simple goiter, for goiter unassociated with hyperthyroidism, are not attended with more than the usual risks incident to all major surgical operations. They give highly satisfactory cosmetic, functional and curative results, especially if surgical relief is sought before the patient has been subjected to repeated courses of iodine therapy and before the occurrence of degenerative visceral changes.

De Quervain[5] reports 2,200 operations for simple goiter with a mortality rate of .86%. For all patients up to forty years (1,682 cases), the mortality was only .06%. In patients under the fortieth year, these operations, performed according to the approved present-day technic, are practically devoid of risks. The risks increase rapidly thereafter; after the sixtieth year, in the absence of urgent indications, it is preferable not to operate.

Operative treatment is indicated in all forms of simple goiter, the goiter of adolescence, of pregnancy and of the menopause being excepted, if the goiter, by its pressure, causes (a) respiratory disturbances (bronchitis, pulmonary emphysema, obstructive dyspnea, asphyxia, etc.). In all patients presenting symptoms of obstructive dyspnea, early intervention is urgently indicated. (b) Circulatory disturbances. Many goitrous patients are cardio-vascular, cardio-renal defectives. "Every goitrous patient is exposed to asphyxia and to cardiovascular accidents."[11] "A goitrous patient is predisposed to myocardial disease."[12] (c) Nervous disturbances. "The paralysis of the recurrent laryngeal nerve which antedated the operation in ten cases was not improved by the operation."[4] (d) Difficulty in deglutition. (e) In the presence of severe pain, of unsightly deformity, of rapid growth of the goiter. (f) If the goiter becomes excessively large, interfering with the patient's work, with his sleep in the recumbent posture. (g) If the goiter does not respond to medication. One should not lose sight of the dangers of non-operative methods. Hyperthyroidism has followed treatment by radium, by serum, by injections of boiling water, etc. As adenomata of the thyroid gland do not respond to medication, they should always be removed. Operation reveals the relation of the goiter to the other cervical structures, shows whether the goiter extends into the thoracic cage, around the trachea to the esophagus, etc.

Accurate and detailed knowledge of the origin and nature of the operative and postoperative dangers incident to intraglandular enucleation and to subtotal thyroidectomy acts as an incentive to early, to more timely operations and to the institution of surgical relief previous to the advent of local complications, previous to the development of degenerative visceral changes. The earlier the operation, the less the risks, the better the end-results. Timely operations skillfully performed will lessen the frequency and the morbidity of the accidents herein considered, will reduce the operative mortality and improve the end-results.

These surgical complications, avoidable or unavoidable, of minor or major

importance, are due, in part, to the patient's unfavorable physical condition at the time of operation, to the use of a method of anesthesia not adapted to the case at hand, to lack of proper correlation of the anesthetic to the technic, to the operator's lack of technical skill, experience and judgment in surgery of the neck, etc. Owing to the study given to diseases of the thyroid in recent years, these accidents are now better recognized, better understood and better managed. The main conditions that may confront the operator are: Hemorrhage, primary or secondary; injuries to the recurrent laryngeal nerve or nerves (compression, contusion, laceration, division); injuries to or partial or complete removal of the parathyroid glands (tetany); postoperative hyperthyroidism, excessive removal of thyroid tissue (myxedema), and postoperative infections. Chief among the uncommon complications are air embolism, collapse of the trachea, esophageal injuries, pneumonia and recurrence of the goiter. Complications such as unilateral or bilateral division of the sympathetic or vagus nerves, injury to the pleura, adhesion of the operative scar to the trachea, etc., which we have not met in our private or hospital practice, we refrain from discussing.

HEMORRHAGE. It is of arterial, venous, capillary or mixed origin. In operating on goiters, we are operating in a very vascular region, on a vascular organ, an abnormally vascular organ. The thyroid gland presents extensive anastomoses not only between the vessels of the same lobe, but also between those of the different lobes. After ligation of the four thyroid vessels, the circulation is reestablished through extraglandular anastomoses.[16] Serious hemorrhage may occur at the time of operation, immediately after the patient has been conveyed to bed or during the postoperative period.

At the time of operation, some hemorrhage is unavoidable. Profuse hemorrhage[5] must be guarded against; it is alarming and, if not controlled, may prove fatal. The vessels of a goitrous thyroid gland show a marked tendency to degeneration. They are dilated, their elasticity is impaired, they tear easily. In some cases, the cervical veins, especially those located at the lower part of neck, are dilated tremendously. The arteries show a thickening of the intima and degeneration of the elastic fibrillae. Care must be taken not to injure the internal jugular veins or the carotid arteries. During the operation, owing to the lowered blood pressure, small arterioles and venules may not bleed and thereby escape ligation or suturing. With the return of consciousness, the blood pressure rises and hemorrhage may occur. Immobilization of the operative region not being feasible, for the first two days following the operation, the patient is to be closely watched, as violent coughing, violent retching, vomiting, too frequent change of position, undue activity can bring on abnormal intra-venous pressure followed by hemorrhage.

Secondary hemorrhage following thyroidectomy may be sufficiently serious to cause death. Chief among its causes are premature absorption, slipping or unknotting of unsecurely tied ligatures, erosion of vessel-walls, errors of technic such as faulty asepsis, overlooking of bleeding points at time of operation, delayed removal of drains, etc.

Hemorrhage manifests itself by pallor, rapid and superficial breathing, rapid and weak pulse; the dressings may be saturated with blood. If the hemorrhage be not checked, it leads to obstructive dyspnea, to asphyxia; it may result in collapse. The loss of blood in itself is a danger. Furthermore, the extravasated blood may exert dangerous compression on the trachea thereby giv-

ing rise to serious respiratory disturbances.

In cases of secondary hemorrhage, reopen the wound widely and carefully and rapidly remove all the blood clots. Locate the bleeding points and ligate the bleeding vessels at their divided ends; reunite the wound edges and apply appropriate dressings. After the hemorrhage has been controlled, if the pulse be alarmingly weak, give normal salt solution subcutaneously and rectally and also such medicinal agents as are indicated.

To lessen hemorrhage, primary or secondary, operative or postoperative, always: (a) operate in suitable surroundings, aided by competent assistants and as rapidly as is consistent with the indications, with the patient's safety. It is needless to employ a long and laborious technic. Celerity is an element of success. (b) Use an incision that gives an adequate exposure of the goiter. (c) Be gentle in all operative maneuvers. There should not be any needless traumatizing of tissues, any avoidable tearing of vessels, etc. The rupture of a large deep seated vein leads to troublesome hemorrhage and to an obscured operative field. (d) Secure thorough hemostasis. Keep the operative field as dry as possible from start to finish. Every bleeding point should be tied with catgut before the wound is closed. (e) Follow standard operative technic: knot all ligatures carefully, grasp and ligate veins as they are divided. It is not necessary to place a cart-load of hemostatic forceps on the patient's neck. In goiter operations, attempts to permanently control hemorrhage by compression are unreliable. In the enucleation of adenomata, all dead spaces are to be obliterated by suturing.

RECURRENT LARYNGEAL NERVE INJURIES. The recurrent laryngeal nerves[2] are more commonly injured than is believed. They supply all the muscles of the larynx except the cricothyroid. Dubs,[21] in 840 goiter operations, reports twenty-six cases of recurrent nerve injury. Capelle,[17] in 1,700 bilateral resections, had 1.3% permanent injuries of the recurrent laryngeal nerve. In operations on goiters, the branches or trunk[26] of one or of both nerves may be clamped, compressed, contused, stretched, lacerated, torn, included in a ligature or divided. Postoperative paralyses of these nerves are occasionally due to their inclusion in scar tissue, to their compression by inflammatory exudates or to the retraction of cicatricial tissue. The pareses or paralyses caused by injuries of the superior laryngeal nerve are not so manifest, not so significant as those due to recurrent nerve injuries and will receive here no further mention. An injury of the recurrent laryngeal nerve may be symptomless, may escape detection. It may first be detected by mirror examination of the larynx and may have only slight appreciable effect: a change in the pitch of the voice, more or less permanent hoarseness, slight difficulty in breathing, etc. When a unilateral nerve injury is not compensated by the uninjured vocal cord, aphonia, obstructive dyspnea and other symptoms result. "The complete restoration of phonation and respiration to normal occurs with restoration to normal of the muscles and cord on one side."[8] Normal voice is restored through compensatory efforts of the normal cord.

Vocal cord paralyses of operative origin result from stretching, clamping, tying, or division of recurrent laryngeal nerve or nerves. Traumatic injuries unassociated with complete nerve division produce symptoms of a temporary character, symptoms which in time disappear.[13] Injuries involving both recurrent nerves constitute a serious complication. If both cords assume the

cadaveric position, there follows a permanent aphonia and later an obstructive dyspnea which, if unrelieved, may be a contributing or decisive factor in the patient's death. Complete division of both nerves has resulted in death from deglutition pneumonia.

Preoperative mirror examination of the larynx gives the examiner exact and positive information concerning the state of the vocal cords;[9] it is a protection to the physician and to the patient. Previous to operation, one cord may be found to be motionless. When one nerve is paralyzed, the patient depends solely on one cord for phonation and normal respiration; in these cases, it behooves the operator to be most careful not to injure the opposite and unaffected nerve.

The recurrent laryngeal nerves are found posterior to the capsule of the thyroid gland, along the side of the trachea and in the groove between it and the esophagus. By scrupulously respecting the posterior capsule with which the nerves are intimately associated, the recurrent laryngeal nerves, always, and the parathyroid glands, almost always, will remain uninjured. The recurrent laryngeal nerves and the parathyroid glands are most surely avoided by leaving the region they traverse entirely unmolested and by not removing the posterior mesial lower part of each lobe of the thyroid gland. Gentleness in the use of hemostatic forceps, in the insertion of sutures and in the handling of tissues tends to lessen the incidence of nerve injury. Rough attempts to shell out, to drag out a deep seated goitrous gland may so stretch the recurrent laryngeal nerves as to cause paralysis of both vocal cords. The nerves may be pinched by a hemostat with other tissue, may be included in a ligature. Some operators, in resecting the lobes of the thyroid gland, proceed from within out. At the time of the patient's discharge from the hospital, reexamine the larynx and determine the presence or absence of any incompetency of the vocal cords.

After subtotal thyroidectomy, loss of voice of varying degrees[8] is due to one or more of the following factors: (a) Change in position of the laryngeal muscles and cartilages, due to the removal of the goiter and the consequent shifting of the displaced larynx back into its normal place. (b) Edema, obstructive or inflammatory, of the laryngeal and peri-laryngeal tissues. Keep the line of dissection away from the trachea and larynx, thereby saving more tissues about these structures and preventing the swelling from extending to the mucous membrane. The laying bare, the denudation of the trachea predisposes to severe bronchitis and endangers somewhat the recurrent laryngeal nerves. In catching bleeding vessels on the surface of the trachea, include in the ligatures as little as possible of the perivascular tissues. These tissues contain the sensory nerves to the trachea and their irritation causes cough and increased secretion of mucus. (c) A true myositis. (d) Trauma of the recurrent laryngeal nerve. (e) Prolonged interference with function.

Pemberton, in discussing postoperative obstructive dyspnea, says: "The routine laryngeal examination of all patients before and after operation and the careful search for a traumatized recurrent laryngeal nerve in all cases of obstructive dyspnea coming to necropsy, has clearly demonstrated that the cause of fully 90% of all cases of marked postoperative obstructive dyspnea is due to a paralysis of one or both vocal cords, the result of an injured inferior laryngeal nerve."

If the vocal cords be in the middle

line position, the same author suggests one of the following three procedures: (a) Permanent tracheotomy. This has obvious disadvantages. (b) Removal of a portion of one vocal cord and of part of the ventricle. This may result in aphonia; it may give only partial relief. (c) The descending branch of the hypoglossal nerve has been anastomosed to the inferior laryngeal nerve (Frazier). This procedure is difficult and is, as yet, only in the experimental stage. Crile[14] advises that the vocal cords be clipped in the center of their free margins, leaving a free space for the passage of air.

POSTOPERATIVE TETANY: The parathyroid glands, four in number, two on each side, are, as a rule, located posterior to the capsule of the thyroid gland and lateral to the esophagus. These glands, inconstant in number, irregular in location, have a function which appears distinct and separate from that of the thyroid gland. Their physiological importance is out of proportion to their small size. The anatomical integrity of these glands is of essential importance to the human organism. Numerous theories concerning the function of these structures have been advanced. They are said to regulate muscle tonus, to form a part of the detoxication metabolism of the body and to control calcium metabolism.[24] Calcium metabolism enters into many medical problems.

The prophylaxis of postoperative tetany presents difficulties due chiefly to the irregularity in number and location of the parathyroid glands. According to most anatomists, the parathyroid bodies receive their blood supply[15] from tributaries of the superior and inferior thyroid arteries and from anastomotic branches of the esophageal arteries. Postoperative tetany is infrequent. It can be caused by any interference with the blood or nerve supply of the parathyroid glands and may follow direct trauma, pressure from obstructive or inflammatory edema of surrounding parts, contraction or retraction of scar tissue or removal of one or more parathyroid glands. The parathyroid glandules, after interference with their blood supply, do not resume their function and the manifestations of tetany do not come to an end before the collateral circulation is reestablished.

De Quervain[25], in 2,203 goiter operations, never had a case of pronounced tetany. He observed symptoms of slight functional disturbance of the parathyroids in only three patients. The best technicians take great care to neither traumatize nor to remove any of these glandular bodies. Injury and removal of the parathyroids can almost always be avoided by leaving a layer of glandular and capsular tissue undisturbed at the back of the thyroid gland. This same precaution protects the recurrent laryngeal nerves.

The deficiency of one or two parathyroids may not cause hypoparathyroidism. Nevertheless, if a parathyroid gland be accidentally removed, it should be transplanted at the close of the operation, preferably beneath the remaining thyroid lobe. Be sure of the nature and state of the transplant. We advise this because the actual condition of the individual glands is not known, as they are often rendered useless by hemorrhage or degenerative changes.

Eiselsberg,[17] in 2,373 goiter operations, records six deaths from tetany; six other patients developed chronic tetany. Knaus [18] reports 619 goiter operations. Five of these were followed by tetany, three recovered and two died. As the operation is nowadays usually bilateral and less radical and because surgeons have come to fully realize the value of preserving some part of the thyroid gland on the posterior capsule, in-

jury to the parathyroids is of very infrequent occurrence. Leave the posterior capsule; do not remove it.

Parathyroid insufficiency may appear any time from six hours to three or four months after operation.[20] It almost always manifests itself by circumoral pallor, by a tight glossy appearance of the skin of the forehead, nose and face, by a sensation of stiffness in the fingers, by carpopedal spasms, etc. It is difficult for the patient to raise his fingers to his mouth or to hold anything. The lowered calcium content of blood serum or plasma causes exaggerated nervous irritability (MacCallum). These symptoms pass off in a few hours or a day, possibly after one or two doses of morphine, or the condition gradually progresses until the contractions involve the muscles of the hands and arms; sometimes the contractions become general. If, in the course of goiter operations, injury or removal of the parathyroid bodies be avoided, tetany will be a rare complication and occur only in its slightest forms.

Postoperative tetany is treated as follows:

(a) By restoring the calcium content of the blood serum to within normal limits. This is effected by administering calcium lactate, gr. xx every four hours until relief is obtained. It is to be given orally, by enema, subcutaneously and exceptionally, intravenously and in larger doses, if necessary. The calcium lactate should be given in water and continued as long as the patient shows symptoms of nervous irritability such as Chvostek's and Trousseau's signs.

(b) By transplanting human parathyroids. The parathyroids used are obtained from fatal accident cases and from normal infants who have died during delivery. These transplants are difficult to obtain, are readily absorbed and of service to the organism[15] while the remaining parathyroids undergo compensatory hypertrophy or the injured or diseased ones recover. Transplantation may be made in the left abdominal wall between the peritoneum and the rectus muscle. Should the patient later submit to an operation for appendicitis, the transplants will not be disturbed. Some operators embed the grafts in the supraclavicular fossa beneath the cervical fascia. The microscope enables one to determine whether or not the transplant is unquestionably parathyroid tissue.

(c) By the various parathyroid serums in the market.

(d) By the ingestion, orally, of parathyroid products. Lahey[11] and others dispute the therapeutic value of parathyroid extracts.

(e) By medicinal therapy largely symptomatic in nature. Chloral hydrate per mouth or per rectum, repeated as needed; morphine sulphate; magnesium sulphate in 25% solution subcutaneousiy[10], [20]. Have patient drink plenty of milk and avoid all kinds of meat.

AIR EMBOLISM: It is a possible though a very uncommon complication of operations about the neck. Many active surgeons possess only a theoretical knowledge of the condition. Among its predisposing etiological factors should be mentioned: The restlessness of patients operated upon under local anesthesia, great loss of blood and wounds of valveless dilated veins. From the prognostic standpoint, owing to its rarity, it is almost negligible.

If during inspiration, air is sucked into a wounded vein and carried to the right heart, there is usually produced a peculiar whirring or churning sound, synchronous with the cardiac systole. The danger of this complication is in direct ratio to the quantity of air aspirated and to the rapidity with which it enters the veins. If dangerous symptoms or death do not immediately follow

the occurrence of air embolism, the accident need not cause the surgeon any further worry. A few cases of temporary paralysis due to air embolism are recorded in the literature.

Treatment: Prophylaxis is the watchword. To lessen its incidence, keep in mind its possibility, minimize hemorrhage, avoid rough handling of tissue, keep patient in the horizontal recumbent position during the entire operation (the sitting posture favors the development of air embolism) and doubly ligate large veins before dividing them[23].

As soon as this accident occurs, to prevent further aspiration of air, elevate the foot of the table, tampon and flush the wound with normal salt solution. While the tampon is being cautiously removed, clamp the wounded vein or veins and ligate them. Artificial respiration may lead to more air aspiration and therefore is not to be practised. Naegele, Jehn and others used forced inhalation of oxygen.

TRACHEAL COLLAPSE: Long continued, unilateral or bilateral, pressure of voluminous goiters can determine either a loss of elasticity, a softening, an atrophy or an almost complete disappearance of the cartilaginous tracheal rings. In these cases, the trachea, after losing the support afforded by its attachment to the thyroid gland, sometimes persists in kinking and in collapsing at the close of the operation. There is no danger of tracheal collapse if the tracheal rings are normal. Many factors enter into the causation of tracheal flattening and collapse: The patient's age, the goiter's histological structure and consistency and, especially, the long continued traction or pressure exerted by the goiter as in the scabbard trachea.

Collapse of the trachea causes obstructive dyspnea, amounting in some cases to asphyxia. With increased violence of the inspiratory efforts, there results a more complete mechanical obstruction to respiration.

Tracheal collapse may be fatal (3b); in extreme cases, it may necessitate a tracheotomy[23]. It may take days, even weeks, for the trachea to recover its efficiency. In about six months, complete recovery usually takes place.

Treatment: By means of a sharp tenaculum inserted on each side of its collapsed portion, the trachea is drawn forward. Should collapse persist or the trachea show signs of recurring collapse, fasten, by a few catgut sutures (stay sutures) the sides of the trachea to the surrounding tissues or fix the resected goiter-stumps to the under surface of the sterno-cleido-mastoid or omo-hyoid muscles and thus secure the tracheal dilatation and prevent the recurrence of the collapse. Avoid perforating, by needle or tenaculum, the cartilaginous rings or the entire thickness of the tracheal wall and thereby eliminate such complications as necrosis of tracheal rings, wound infection, etc.

Tracheotomy is rarely indicated. In twenty-three cases of tracheal collapse due to tracheomalacia, Czermak performed it only twice.

RECURRENCE OF GOITER: Recurrence of goiter and recurrence of symptoms are noted in a small and decreasing percentage of cases. The portion left, the opposite lobe or the isthmus may hypertrophy. It is most frequent within the first five years after operation[22]. Recurrence causes symptoms chiefly when bilateral. Some recurrences cause only cosmetic defects. After enucleation, cysts or adenomata of new formation have been observed. Dubs[21], in 840 goiter operations, reoperated fifty-three patients in each of which the recurrent goiter visibly and palpably exceeded the normal consistency and size of the thyroid gland.

If the operators underestimate the

amount of gland tissue to be removed, if the blood supply of the tissue left is not sufficiently shut off, if the primary cause of the goiter persists, if focal infections are left untreated, recurrence is more probable. Recurrences become fewer as the surgeon's experience increases.

In general, the amount of tissue to be left should be the functional equivalent of a normal gland. Postoperative prophylactic treatment: The use of boiled drinking water, orange juice, the suppression of all foci of infection, (teeth, tonsils, and others) etc., is very important. I follow the practice of Crile[20], who believes that, by giving minute doses of iodine for not less than one year after thyroidectomy, recurrences are prevented. In this connection, keep in mind that some patients are iodine-refractory and others are iodine-susceptible. Operation on a recurrent goiter is more dangerous than the primary operation on account of the necessity of preserving an adequate amount of gland tissue and of the presence of cicatricial adhesions.

POSTOPERATIVE HYPERTHYROIDISM: Owing to the present-day combined medical and surgical treatment of goiter cases, postoperative hyperthyroidism is infrequent. According to the latest researches, it follows the entrance of glandular elements and ferments squeezed out of the gland into the circulation. The absorption of thyroid secretion, during the operation and afterwards, also takes place through the wound surface. The patients are seized by a psychic storm, usually of an agitated maniacal type, there is restlessness, accelerated pulse-rate, reaching 150 to 160 per minute, elevation of temperature (105°-106° F.), disturbed cardiac action, etc.

The frequency and severity of postoperative hyperthyroidism are lessened by observance of the following precepts: Operate as rapidly as consistent with the patient's safety and the completeness of the operation, secure perfect hemostasis, avoid squeezing of the gland and all needless traumatizing of tissue, make ample provision for drainage and see that oozing blood and effused thyroid secretion escape easily, and do not remain in contact with the wound surface.

Drainage relieves tracheal compression due to postoperative hemorrhage and prevents hematoma formation. After all goiter operations, give large quantities of normal salt solution subcutaneously and rectally. By this practice, the absorption of thyroid secretion is lessened and general elimination is increased. For the high temperature, the cold pack is most serviceable.

POSTOPERATIVE MYXEDEMA: Total thyroidectomy having been frequently followed by myxedema is now no longer performed. In goiter operations, hypothyroidism will not result if a small piece of thyroid tissue with adequate blood and nerve supply is left. "The old procedure of removing one lobe is inadequate. The dictum that one-fifth of the thyroid mass should be left is equally unsatisfactory"[27]. If we leave a quantity equal to about one-fourth of the healthy gland, symptoms of thyroid deficiency will not develop. In the individual case, the quantity of gland tissue to be saved is to be left to the surgeon's judgment. He alone has a thorough knowledge of the patient's condition. This is essential to determine when and what to do rather than where and how to do it. Some operators leave small masses at each horn of the organ and, in addition, a thin layer of thyroid tissue attached to the posterior untouched part of the gland capsule. These masses are well supplied with blood and lymphatic vessels and

can, if needed, undergo compensatory hypertrophy.

In postoperative myxedema, there is impaired memory and intelligence, there is apathy, somnolence, great disinclination to effort. An edematous swelling of the skin develops and the patients complain of feeling cold. In young individuals, the growth is stunted. Hypothyroidism is characterized by a definite reduction in the basal metabolism; the metabolic rate is always lower than that of normal individuals of the same age and sex.

The successful management of these cases is one of the noteworthy triumphs of organotherapy. Institute treatment at the first appearance of symptoms. Make up the deficit of thyroid secretion by thyroid treatment. In directing and guiding thyroid administration, metabolic rate determinations are of the greatest importance. Bring the patient's metabolism to normal and ascertain the dose necessary to keep it there. The patient is to be given iodothyrin or another suitable preparation of thyroid gland or may be fed thyroid gland substance. The active principle of the thyroid gland, thyroxin, may be given intravenously. Thyroid gland tissue has been implanted. Organotherapy is to be continued for weeks, for months and thereafter is continued intermittently for some time; it may have to be continued for many years. In course of time, the symptoms of thyroid deficiency usually subside and may permanently disappear.

POSTOPERATIVE INFECTIONS: Despite careful asepsis and perfect hemostasis, every now and then postoperative infections occur. They usually come from without, exceptionally, from within. In their causation, local tissue resistance and the individual's general resistance are not negligible factors. In the space remaining after removal of the goiter, blood and wound secretion easily pool and are prone to infection.

The indication is self-evident. Let your technic be flawless. Do not wound the trachea or the esophagus; these wounds are often followed by infection of neighboring regions. Should the esophagus be accidentally wounded, immediate exact apposition and suture of the wound edges is indicated. After all goiter operations, drain for about forty-eight hours, thereby preventing the symptoms and sequelae due to retained thyroid secretion and extravasated blood. The treatment of postoperative infections occurring in this region is that of infections in general.

POSTOPERATIVE PNEUMONIA: Owing to its unfavorable prognosis, it always gives the clinician the greatest concern. The pain in the wound hinders expectoration and lung aëration. The pneumonia may be endemic or epidemic in nature, may be postanesthetic, may follow the aspiration of mucus, blood or stomach contents, may follow exposure to cold before, during or after operation, may be due to infective emboli, etc., but most often, almost always, is primarily due to an injury of the recurrent laryngeal nerve or nerves. In the etiology of pulmonary complications, injury of the recurrent laryngeal nerve or nerves is the paramount factor. In old individuals, this condition is frequently hypostatic in type and fatal in outcome. The abandonment of prolonged anesthesia, the avoidance of unnecessary exposure, denudation and rotation of the trachea and especially care to not injure the recurrent laryngeal nerves have practically eliminated postoperative pneumonia as a danger in goiter operations. If by accident the trachea be opened, guard against the aspiration of blood. Should the latter occur, lung abscess or degluti-

tion pneumonia may follow. The treatment of postoperative pneumonia is, as yet, purely symptomatic.

DISTURBED DEGLUTITION: In dislocating large goiters, the nerves supplying the pharyngeal muscles may be traumatized. Dysphagia of several days duration always follows goiter operations; it is manifested by pain on swallowing. Sometimes, after operation, patient chokes when trying to swallow fluids. The liquid flows back into the nose or drops into the larynx and trachea. Combat this by turning patient on his face with his head over the edge of the bed; place the glass on the floor or on a low stand and let him drink through a tube uphill. All nourishment will have to be given in this manner until normal control of the pharynx is regained.

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Preparations for Procurement*

By Dwight F. Davis, Assistant Secretary of War

Man-power is no longer the only limiting factor in war. The battering ram has been replaced by super artillery; expert archers have given way to no less expert machine gunners; the ornate knight on charging steed has been supplanted by the unromantic machinist at the throttle of a tank; the wings on the heels of Mercury have been magically transformed into thousands of airplanes. War is limited by its iron and its explosives no less than by its blood.

The World War was a great teacher. Probably its greatest military lesson was that men can be raised and trained much faster than they can be properly supplied. Recruits in England and America drilled with dummy guns; in Russia troops engaged the enemy with clubs, depending for their arms on the rifles of their fallen comrades; American boys in France had to use borrowed artillery and airplanes. Adequate preparedness involves, therefore, a balanced program of preparation of man-power and preparation for the procurement of munitions.

It is my purpose to outline in the way we are proceeding in developing plans to stand prepared in our procurement program and to give an idea as to their character and scope.

I take this opportunity to welcome the helpful criticism and assistance from that great force of Reserve Officers which represents more than 80 per cent of the strength of the Army of the United States.

Stated in terms familiar to military men, the basic reason for industrial mobilization is given in our mission. The National Defense Act as amended defines this mission as follows: "The Assistant Secretary of War shall be charged with the assurance of adequate provision for the mobilization of material and industrial organizations essential to wartime needs." Before a decision could be reached and any sound plans prepared it was necessary to make a careful estimate of the situation, to determine the obstacles to be encountered, the forces at our disposal to combat these obstacles, and to weigh the relative values of ways and means of executing this mission.

Essentially the problem involved is to so marshal the resources of our farms, mines, forests, manufacturing plants, power, labor, money and transportation that we shall be prepared to meet war requirements most quickly and efficiently with the least dislocation of industry and consequently the minimum necessity for economic adjustments during the period of reconstruction after war.

The chaos which reigned for many months after our entrance in the World War with one army supply branch bidding against another, with different departments of the government commandeering critical supplies, with prices soaring, labor in a turmoil, power short and transportation congested—these represent some of the major forces of the antagonist in the greatest industrial drama ever enacted in history.

To carry out the metaphor, the deep-rooted patriotism of our citizenry, our enormous industrial wealth and resources, the ingenuity of our business men, their inherent ability to organize, to overcome obstacles, and to establish large manufacturing plants in record time, producing masses of munitions in unprecedented quantity—these contributed to the power of Uncle Sam, the protagonist who represents the invincible Spirit of America.

*Reprinted from *The Reserve Officer*, June, 1925.

Despite this invincible spirit of accomplishment we must not lose sight of the fact that America was just getting prepared in an industrial sense to fight a man-sized war in the spring of 1919. After 19 months of warfare up to the signing of the armistice our troops were still using French artillery and French airplanes—the man-power part of our program was nearly a year ahead of munitions in most vital respects.

The means of evolving order out of chaos as finally developed during the World War constitute invaluable experience from which we have drawn freely in determining the best way in which we can solve our present mission in industrial mobilization. The outstanding organization which contributed most to the equitable balancing of supply and demand was the War Industries Board. The means and methods employed by this body of prominent industrialists are therefore a constant source of study in our industrial planning.

Moreover, former members of the War Industries Board as well as other citizens of prominence who participated in the great war problems of balancing supply and demand are continually coming to our assistance in assuring that our present plans shall be logical and sound. The helpful criticism and cooperation of such industrial leaders as Mr. Schwab, Mr. Scott, Judge Gary, Mr. Crowell and Mr. Baruch are invaluable.

In the crystallization of different phases of our plans predicated upon innumerable investigations, research work and data on the resources of the industries concerned, many national technical societies, trade associations, technical magazines and other governmental bureaus are taking an active interest. Many of you Reserve Officers are members of these organizations and are already taking an important part in this work. We ask for your further cooperation and advice not only as to what is to be done but also as to what should not be done. Your aid has been most helpful and our appreciation is acknowledged.

Broadly our plans include: First, a calculation of our needs, in the event a major war is forced upon us; and, second, a determination of the best available sources to fill these needs.

Based upon defense plans as drawn up by our General Staff, calculations are made as to the number of articles required from month to month. About 35,000 articles are involved, consisting of 700,000 component parts. For example, if the number of airplanes required were spread out with equal distances apart from the earth to the moon, the distance apart in flying time would be less than five minutes. An idea of requirements for only six months of small arms ammunition may be gained from the fact if these small rounds were strung out in line they would encircle the globe. All such items have to be broken down further into raw materials, power, labor and other similar factors essential to their production. Navy requirements are being coordinated with Army needs through the Army-Navy Munitions Board. Estimates of the needs of civilians and other government war bureaus, as the Shipping Board, the Railroad Administration, are made from records of the World War and from information obtained from government bureaus and American industry.

The second part of our problem—determining the best sources of supply—involves intimate and continuous contact with industry. The chief of each of the seven commodity supply branches is held responsible for the procurement of his commodities: Ordnance, Quartermaster, Air Service, Chemical Warfare, Medical Signal and Engineer. Coordination of their work is vested in the office of the Assistant Secretary of War, while each

chief of a supply branch decentralizes his operations in district chiefs. The area of the United States is divided into 14 War Department districts along industrial lines, and civilians or officers are appointed therein as representatives of supply branch chiefs in Washington.

Work of district chiefs in time of peace consists principally in surveying factories to determine the plants best prepared to produce particular articles which have been apportioned to the chiefs for procurement. The selected plants in turn are urged to prepare factory plans governing the manufacture of these items. At the outbreak of war the district offices would operate to inspect and accept the supplies ordered on tentative peace-time contracts. Thus control of the work is centralized in Washington, whereas actual procurement is decentralized in the districts.

In essence our plans are for the purpose of preparing industry to reach its stride in the quickest possible time. Of vital importance is the fact that the power of our nation to defend itself depends upon ready and prepared industry as well as trained man-power. Troops and material must develop side by side. Each is essential to the other.

Again I wish to express appreciation for the help, encouragement and cooperation already manifested by Reserve Officers in the work. Many of our patriotic citizens are giving unstintingly of their time and of their money in furtherance of these plans in an organized effort to accomplish our mission in the most expeditious and efficient manner. Once accomplished, we may all freely share in the lofty satisfaction of having given to our country the best assurance against war.

Finally, just a word about the way the Reserve Officer fits into our plans. Over 95 per cent of our officers for procurement in war will be drawn from Reserve Officers. Less than 30 per cent have been selected and notified of their assignments to date, and a much smaller per cent still have received any training by correspondence courses or call to active duty. There is a large opportunity, therefore, for business men and scientists to serve their country to the best of their qualifications. If the readers of this magazine know of any such men who would be valuable for this work I would be glad to hear from them and assist in getting them in touch with the proper supply branch to obtain a commission in the Officers' Reserve Corps. While procurement and training of personnel is decentralized in the districts and each district chief is on the lookout for good men, I am always glad to receive applications and help in the distribution of personnel for our Washington offices as well as the districts and Government arsenals and depots. As far as our funds permit, we are sending Reserve Officers to Washington, district headquarters and to arsenals for courses of instruction. There they become acquainted with their war-time functions and learn thoroughly the principles along which our plans are laid for industrial mobilization.

Professor Michelson Receives Distinguished Service Professorship

At the one hundred and thirty-seventh convocation of the University of Chicago, June 16, Prof. Albert A. Michelson, head of the department of physics, was appointed to the first of the Distinguished Service Professorships recently established at the university with a special fund of $200,000, the gift of Martin A. Ryerson, formerly president of the board of trustees and donor of the Ryerson Physical Laboratory.

The Peril of Narcotic Drugs

By the International Narcotic Education Association

PHILOSOPHY-HISTORY

The human race is consuming every year many thousands of tons of poisonous narcotic drugs, not one per cent of which is necessary for strictly medicinal purposes. Nearly all of this great quantity is consumed by addicts who number in the world scores of millions—who are abject slaves—who consider getting their drug supply as the supreme consideration, in many cases as a matter of life and death.

The production and distribution of these drugs constitute a profitable traffic of vast proportions extending to all corners of the earth. In the Orient, the chief home of the sleep poppy whose seed capsules produce opium, the governments, for the revenue profits, encourage and often subsidize production and control distribution. In the Occident, where chemical science is turned to concentrating the poison of opium into morphine and turning this into a still more powerful poison narcotic, heroin, laws and regulations loosely enacted for repression drive most of the addiction traffic to cover where it flourishes in the dark in spite of the agents of the law.

The motive and urge that constantly drive the traffic on are the enormous profits, the jobber and retailer between them often realizing more than a thousand per cent profit. Add to this the lure for the armies of impoverished addicts of getting the drug for themselves through recruiting and supplying new addicts.

The profits are so great because the poor addict, under the awful depression and torture of withdrawal symptoms, feels he must have the drug no matter what the cost or the consequences, whether he has to spend his last dollar, whether he has to steal to get the money, whether he has to rob or even commit murder.

The bulk of this vast horde are "hooked" into addiction because of their ignorance, never dreaming what the consequences are to be when they take the first "shot" or first "sniff."

The sleep poppy, the source of opium, is a native plant in Asia and southeastern Europe. Frequent notices of its use for poisoning are found in ancient and medieval records. Opium smoking was devised by the Dutch in Java in the eighteenth century, first mixed with tobacco, then used alone. From Java, it was taken to Formosa, and thence to the mainland of China.

Portuguese traders first developed the importation of opium into China.

They were succeeded by the East India Company with a monopoly of the traffic in India. The amount shipped from India into China rose as high as 10,000,000 pounds in the year 1858. In 1906 the production in China itself was estimated at 44,000,000 pounds, importations from India that year running over 7,000,000 pounds. At that date estimates place the number of addicts in China at 27 per cent of the adult male population.

In 1803, a French chemist discovered how to produce morphine from opium, and a half century later an Austrian chemist discovered how to produce cocaine from coca leaves.

These concentrated drugs used generally in medicine, ten times as powerful as opium, swiftly produced addiction in all lands, at first as a by-product of medical practice, later through exploitation as well.

In 1898 a German chemist discovered how to produce heroin from morphine, between three and four times as powerful as morphine. With the spread of heroin, the narcotic menace has developed into a pressing world peril.

In 1729 the Chinese government issued an edict prohibiting opium smoking in China. The effect was good but proved of little permanent avail. In 1790 the Chinese government again issued an edict prohibiting opium smoking and in 1800 prohibiting the importation of opium into China. This led up to the opium wars waged on China which compelled its submission to the importation of the opium.

The dawning of hope for real reform came when America in 1905 enacted a law prohibiting opium traffic in the Philippine Islands and sent a committee to the governments of the Orient. This action was followed by China in 1906 with an edict prohibiting the use of opium and the culture of the poppy. Upon the initiative of the United States, the first international opium conference was held in Shanghai in 1909, followed by a second and third conference at The Hague in 1912 and 1913. Recently conferences of the opium commission of the League of Nations and its committees have been held at Geneva.

These conferences while of great value, particularly in bringing out the fact that narcotic drug addiction is a problem to all nations and to the human race, have illustrated how slow and how difficult it is to secure adequate international cooperation and how, even where these have been secured, though of elementary nature, the greatest difficulties have been encountered on account of smuggling. Universal experience has shown that laws and treaties are difficult to secure and more difficult to enforce.

TOXICOLOGY—BIOLOGY

The principal narcotics that have defied legal control and are now scourging humanity, namely, opium, morphine, cocaine, heroin, belong to the general class of organic or hydrocarbon poisons. They concentrate their attack upon the nervous system, producing in toxic doses, delirium, coma, convulsions.

These are all alkaloidal poisons, most of which in nature are generated by plants.

Opium is the coagulated sap of the capsules of the sleep or white poppy, grown chiefly in India, China, Turkey, and Persia. Morphine constitutes the principal poisoning element in opium, about 8 to 15 per cent. Heroin was made formerly only from morphine by treating it with acetic acid and hydrochloric acid. It is reported now, as stated, that chemists have learned how to make it synthetically from coal-tar products. Cocaine is made usually from the leaves of the coca plant grown chiefly in South America, but is now made also synthetically from coal-tar products.

Chemically, these poisons are built up around the deadly pyridin base containing five atoms of hydrogen, five atoms of carbon, and one atom of nitrogen, joined together in a nucleus like a closed ring. The complex structure in this opium group contains three rings, the phenanthren structure united to the nitrogen nucleus, with oxygen introduced.

In morphine, the formula, C 17, H 19, N O 3, contains 17 atoms of carbon, 19 of hydrogen, and 1 of nitrogen, 3 of oxygen. The formula of cocaine is C 17, H 21, N O 4. In the case of heroin, acetic and hydrochloric acid introduce additional complexity, giving more powerful poisoning properties, producing morphine-diacetylate, having the formula C 21, H 23, N O 5.

Protoplasm, the living material from which all living parts are built, is com-

posed of proteins, water and a little salt. Its life processes require a regular supply of food and oxygen and regular elimination of waste products. Some poisons attack the protoplasm itself; some interfere with its necessary life processes; some do both.

The highly organized alkaloidal poisons combine readily with proteins, and easily penetrate the wall or sheathing that protects the living cells. Consequently, we would expect the result to be not only violent derangement in the usual activities and life processes, but permanent injury to the structure.

Since the nervous system is the most highly organized part of the whole human organism, it is not surprising that these complex alkaloidal poisons should show their chief effect upon the nervous system and should attack man more than the lower animals. Since, of the nervous system, the upper brain is the most delicate, it is not surprising that this part should be quickly attacked and deeply injured, although it is from damage to the functions of the lower brain that death occurs with a fatal dose.

PHYSIOLOGY

Narcotics are soluble in fat, so they penetrate the fatty sheathing that protects the brain from most harmful substances in the blood current, and in this way the poison comes quickly in contact with the delicate, highly organized gray matter.

One of the earlier physiological effects is to stop the action of the parts that cause the sensation of pain, and this is what gives narcotics their chief legitimate value in the practice of medicine, but even in the effect of deadening the sense of pain, the action of the drug is that of a poison. The medicinal is contracting.

In the same way these poisons attack the delicate, carefully protected organs of reproduction, impairing the sexual powers of the male, causing the female addict to become sterile, and undermining the germ plasm by virtue of which the species renews its life from generation to generation.

Tyrode (Harvard) in his Pharmacology, sums up the symptoms of morphine addiction as follows: "Depravity of the mind; general debility; loss of weight and appetite; loss of sexual powers; sleeplessness; eczema; contracted pupils; diarrhea, alternating with constipation; and finally death from malnutrition."

The case is different with cocaine and heroin. The victims of these powerful drugs, unless they have repeated treatment, live but a short time, at best. The degeneration of the upper brain is so swift that the elements of character crumble in a few months. Complete demoralization follows and often the life of crime joins with physical ills and the spur of torture of the drug to hasten the end.

One-eighth of a grain of morphine or one-twenty-fifth of a grain of heroin is sufficient to cause the drug effect. In a few days the system will develop sufficient capacity to neutralize this quantity. Then the drug effect will be felt only after getting beyond the point of neutralization, when it will be necessary to have a quarter of a grain, later a half grain, and soon a grain and more to produce the desired effect. Though 1 to 2 grains of morphine is a fatal dose ordinarily to a person unaccustomed to the drug, 10 grains of morphine daily is common, many taking 20 grains, some 50. There are records of more than 100 grains taken daily.

When the drug begins to subside, as it does in a few hours, the equilibrium is upset as though by an irritating poison. The distressing effect is general, no part of the body escapes. A condition of torture sets in. The muscles seem to become knotty. Cramps ensue in the

abdomen and viscera, attended frequently by vomiting and involuntary discharge of the bowels. Pains often succeed each other as though a sword were being thrust through the body. In advanced cases this suffering (called withdrawal symptoms) is considered the most acute torture ever endured by man and continues for days. In some cases death will ensue if the addict is far advanced and the dose or "shots" are suddenly stopped. The drug of addiction will quickly relieve this torture. Naturally the addict comes to consider getting his supply of the drug as a matter of life and death.

PSYCHOLOGY

Morphine, cocaine, heroin are white powders, all soluble in water, all bitter to the taste. Morphine is usually put up in the form of tablets. Cocaine and heroin are called "snow," and in various localities by other names.

Heroin predominates now, especially in the eastern portion of the United States, so that "snow," "snow parties," etc., refer usually to heroin.

When luring girls into addiction the peddler often calls heroin "headache powder." With peddlers at large, using as they often do boys and girls to aid them, the safe precaution for a youth of either sex to take is to repulse instantly any suggestion to "take a shot," which means to take a hypodermic of morphine, to take "a sniff" or "a blow" of "snow," and to avoid all forms of white powder.

It is the custom to give away heroin free to the youth till he or she is "hooked." When children are away from home it is a safe practice to accept nothing as a gift to eat, drink, or whiff, not even from a supposed friend. When you decline the first offer the boy or girl aiding the peddler will taunt you or challenge you and say "try anything once," "you will get a kick out of it," "watch me," "come to our 'snow party' and watch the other fellows do it." Alas! Once is once too often. The poison is so swift that the poor youth will seek the next party for relief, and the next. A "snow party" a day for a week will probably drag a youth into the bondage of addiction worse than death from which experience teaches there is no sure escape.

The narcotic poison penetrating the upper brain naturally inflicts the deepest and swiftest injury upon the parts that are the tenderest, the most complex and unstable, which are developed latest in human evolutionary progress and distinguish the man from the brute. This part of the brain may be considered as the temple of the spirit, the seat of altruistic motives, of character, of those high, God-like traits upon which an advanced and enduring civilization are built.

The transformation in character is swift in the young, and swifter with cocaine and heroin than with the other narcotics. In an incredibly short time, a youth of either sex "hooked" with the "snow gang" loses the results of good heredity and of careful home training.

Self-respect, honor, obedience, ambition, truthfulness melt away. Virtue and morality disintegrate. The question of securing the drug supply becomes absolutely dominant. To get this supply the addict will not only advocate public policies against the public welfare but will lie, steal, rob, and if necessary, commit murder. Thus we can understand how intimately addiction is connected causatively with crime.

In addition to the general antisocial traits of all addicts, the heroin addict has two special characteristics. First, for a period after taking the drug he experiences an "exaltation of the ego," looks upon himself as a hero. Bent

upon getting money to buy his drug, he will dare anything, thinks he can accomplish anything. The daylight holdups, robberies, and murders committed by these young criminal heroin addicts eclipse in daring all the exploits of Jesse James and his gang. This can be said also of cocaine addicts.

Secondly, the heroin addict has a mania to bring everybody else into addiction. It may be said in general that all addicts have a desire for company and wish others to share with them the problem of securing the drug supply, but in the case of the heroin addict, it is an absolute mania for recruiting. He thinks, dreams, plots to bring all whom he contacts into addiction. All addiction tends to spread. Heroin addiction can be likened to a contagion.

Another general characteristic of addiction psychology is secretiveness. Where the drug supply is easily accessible so that withdrawal symptoms do not occur, addicts sometimes remain for months or years undetected by their own families and most intimate friends.

SOCIOLOGY

The family is the foundation of society. In the family, society not only prepares its citizenship in the most essential attributes of character, but renews its very life through the welding of two lines of germ plasm. Without considering the economics of the home and the want and tragedy that come in with narcotics, we must look upon narcotics as making a deadly assault upon the germ plasm itself. In the earlier stages addiction weakens the germ plasm and tends toward the production of abnormal offspring.

In the later stages of addiction, the male addict loses sexual power and the female addict becomes sterile, thus the line of germ plasm ends.

It is usually morphine given in illness by a careless physician or taken in patent medicines that brings addiction, with its train of sorrows, to parents in established homes. However, these make but a small percentage of the new addicts. Heroin, on the other hand, usually catches the boy and the girl between 16 and 20, or even younger, like the young bird before it has learned to fly, and the new homes are never built. These victims constitute the bulk of new recruits that are swelling the ranks of addiction.

The average standard of character of the citizen determines the stage of civilization. The spread of morphine addiction tends to bring social disorders and gradual decay. The spread of heroin besides lowering the standard of citizenship of necessity hastens social death by stopping the reproduction of homes.

It is with the Nation as with the individuals and the families that compose the Nation. The unchecked advance of addiction must entail national degradation, ending in natural death.

In scientific circles because of their ghastly plight and almost hopeless outlook for permanent relief addicts are called the "living dead." The spread of addiction in any land must be regarded as the approach of the "living death" to that people. Left to run its course, the approach will be slow or swift according to the drug. Slow with opium, faster with morphine, galloping with heroin.

Suppose it were announced that there were more than a million lepers among our people? Think what a shock the announcement would produce. Yet drug addiction is far more incurable than leprosy, far more tragic to its victims, and is spreading like a moral and physical scourge.

In the latest hearings—those conducted by the Committee on Ways and Means, having under consideration the Porter antiheroin bill, just enacted—Dr. Amos O. Squire, chief physician of Sing

Sing Prison, said: "That drug addiction is on the increase there is no doubt in my mind. To illustrate, since 1918, comparing it with the year ending June, 1922, shows an increase of 900 per cent in the number of drug addicts admitted to Sing Sing Prison. There has been a radical increase since 1919."

Before the same committee John W. H. Crim, assistant attorney general of the United States, speaking of narcotic addiction, said: "It is unquestionably increasing. About 40 per cent of the prisoners we are sending to the penitentiaries at Atlanta, Leavenworth, and McNeil Island this term of court are addicts."

Dr. Alexander Lambert, in a hearing before the Committee on Foreign Affairs, Sixty-seventh Congress, said: "Cocaine brings on insanity, an acute insanity with it, but cocaine and heroin both inflate personality. Heroin cuts off the sense of responsibility in the moral sense much quicker than morphine. The heroin addicts will more quickly commit crime, with no sense of regret or responsibility for it. The herd instinct is obliterated by heroin, and the herd instincts are the ones which control the moral sense in the sense of responsibility to others. Heroin is the worst evil of them all."

On account of secretiveness no one knows just how many heroin addicts there are in the country. We know it is an army. Serious estimates for the total number of addicts as reported in the 1918-19 survey of the Treasury Department range from 200,000 to 4,000,000. Dr. Carleton Simon, special deputy police commissioner of New York City, has estimated that while only 58 ounces of heroin were lawfully prescribed by the medical profession in the City of New York in the last 12 months 76,000 ounces were consumed. Remember that 2,000 young addicts can be created with 1 ounce. The mind that concentrates upon the heroin problem must stand appalled.

TREATMENT

While a real beginning has been made in international relations looking toward the control of the production and international distribution of narcotic drugs, experience has shown how difficult it will be to secure and enforce adequate measures. High hopes have been created by the activities of the opium commission of the League of Nations, but an investigation of the particulars has shown how many obstacles—some almost insuperable—have been encountered, especially where vested commercial and financial interests are involved. Even if an adequate agreement were reached as to the production of opium by the members of the League of Nations, some of the most important producers of opium are not in this league. Even if it were possible to control the production of opium from the poppy, its production or the production of its narcotic alkaloids by synthetic process can scarcely be controlled even by the most drastic international and domestic laws.

Our Treasury Department estimates that more than 90 per cent of all the drugs used in addiction are now smuggled, in spite of all that our Federal Government and state governments are doing. All measures found practicable should be taken to secure standard laws by national, state, and local governments, and cooperation of agents in their enforcement. Yet vast profits are at stake; the drugs are powerful and concentrated; airplanes or even carrier pigeons are effective as carriers. Consequently the law at best is not an adequate effective treatment of the problem.

Much confusion exists in the manner of treatment of addicts. The methods are various and the results are varied. The consensus of expert authorities,

however, shows that the percentage of addicts who remain permanently cured is exceedingly small—so very small that while salvage is an important humanitarian matter, it can not be considered in any sense as a primary means of treatment.

Prevention is society's recourse. Education alone can be regarded as adequate treatment. Quick information conveyed to society everywhere as to the peril that exists will arouse a motive for self-preservation, from which will flow the best that can be done in laws and in salvage. Regular instruction, uniformly, wisely, automatically carried out in homes and in schools will cause the young hereafter to have a consciousness of the danger upon the approach of a peddler, and this education repeated through the generations will clothe society with a mantle of protection, producing a race consciousness of this new peril of environment leading ultimately to immunity. The words of the legislative committee appointed by the New York State Legislature sum up the case as to narcotic drug addiction: "The cause is ignorance, the consequences misery, the remedy education."

CONCLUSION

From the foregoing we have the following conclusions: Narcotic drug addiction is a serious universal problem which has become acute in America through the spread of heroin addiction. There are probably five times as many narcotic drug addicts in the world as there ever were slaves at any one time, and the bondage is far more abject and far more dangerous.

America is being assailed by opium with Asia as a base, by cocaine with South America as a base, by heroin and synthetic drugs with Europe as a base. An unscrupulous traffic within joins the traffic from without. This deadly drug warfare, that from three sides and from the inside is striking at our citizens, our homes, our institutions, the very germ plasm of our people, is more destructive and biologically more dangerous to our future than would be united military warfare against us from these three continents.

Without knowledge of this peril, people, especially the youth, fall easy victims to organized exploitation. Delay will be costly to the Nation in life and character and the stability of our institutions. To the task of carrying out promptly an adequate educational program all good men and good women who love their country and love humanity, and all constructive organizations—private, semipublic, and governmental—should rally. Upon the result hangs the destiny of America and in large measure the destiny of the world.

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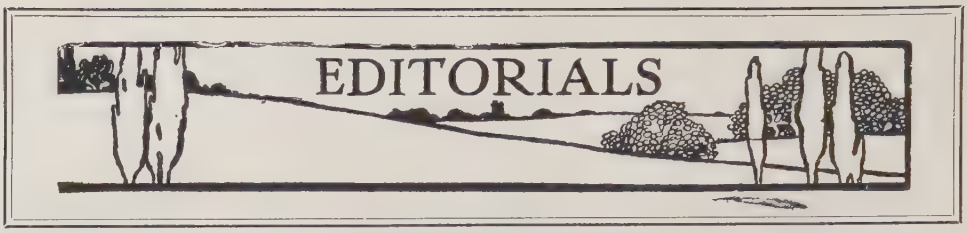


DR. WILLIAM C. WITTE

On June 14, 1925, at his residence, 1330 Rosedale Avenue, Chicago, Ill., occurred the death of Dr. William C. Witte.

To those of us who had the pleasure and privilege of laboring with him and knowing him intimately the announcement of his death came as a double shock and surprise for even to the keenest observer, Dr. Witte appeared to be in the best of health and in the pink of physical condition.

Following his interneship in Cook County Hospital Dr. Witte entered the U. S. Public Health Service and was considered by that organization as one of their best medical officers. He served faithfully and well up to and including the World War. Following the war when the U. S. Public Health Service was given the task of providing hospitalization and treatment for the disabled soldier, Dr. Witte was assigned to the Eighth District with headquarters in Chicago and rendered valuable service in the organization and administration of the medical activities in that district.

After the organization of the U. S. Veterans' Bureau the U. S. Public Health Service recalled all regular officers. Shortly afterwards, Dr. Witte resigned his commission in the U. S. Pubic Health Service to enter private practice.

Dr. Witte was especially fitted by nature for his chosen profession. His fine physique, wholesome personality and his good nature all combined to attract friends and patients to him. Added to his natural qualifications was his fine medical training and his determination to give his best to the community he was attempting to serve.

Our heartfelt sympathy goes out to Mrs. Witte and the three small boys.

Truly he was a credit to our profession and we are the better for having known him.

Wm. E. Kendall,
Regional Medical Officer,
U. S. Veterans' Bureau.

THE PACIFISTS

As we have time and again stated in our editorials, the pacifists are worse than the anarchists and should be promptly exported from this country. We are more than glad to have Rear Admiral Bradley A. Fiske, U. S. Navy, agree with us, and in the remarks that follow, he hits the keynote of the whole matter when he states: "The greatest danger to the American flag is not 'communism' but 'pacifism.'" We publish herewith his speech, as follows:

Admiral Fiske said, "I beg leave to suggest that this is not a sentimental question, but a practical one; and that the duty of protecting the flag is in the same class with the duty of a man in protecting his wife and children.

"Like most duties it involves labor and discomfort, and like many other duties, it also involves danger. It is the conscientious discharge of such fundamental duties that builds manly and kindly character, both in individuals and in nations.

"An interesting phase of the situation is, however, that if you deal with the flag in an emotional way, if you talk about Old Glory and the Stars and Stripes, and how noble it is to die for your country, you receive rapturous applause and are spoken of admiringly; whereas, if you speak of the matter in a practical way, and say that

really we ought to be able to protect the flag in case of emergency, you are denounced as a 'jingo.'

"If you declare that you have no end in view except to prevent a recurrence of the temporary or permanent disasters that have invariably resulted from unpreparedness, you are called a 'militarist.'

"If you point out, as a student of history, that there are certain causes at work, the like of which have often caused wars in the past, you are denounced as attempting to stir up ill will among nations.

"If you point out that wars have always succeeded each other with distressing frequency, and that it would be wise to be prepared for the next one, you are accused of directly inciting the people to war.

"Do not think that you can escape by simply stating facts, or by calling attention in precise and moderate language to well established principles. You can rely with certainty on some headliners and editorial writers making you say things that you never said, and never dreamed of saying. You will receive abusive letters from women and be cartooned and held up to public opprobrium.

"Please let me point out here that the pacifists, so called, are no more pacifists than you or I. They simply call themselves pacifists, and thereby give the impression that they are more pacific in their ideas and methods than we are.

"But the reverse is true; and I say this with full knowledge. For I know many so-called pacifists, and I know many people whom they call militarists; and I also know that the so-called militarists are much more pacific in their attitude and language than the pacifists. A sharp contrast exists between the moderate and almost mathematically precise statements of the so-called militarists, and the immoderate and often abusive language of the so-called pacifists.

"And I should like to point out one more thing; and that is that the so-called pacifists, while they abuse the people who urge the nation to keep reasonably prepared for war, and while they declare loudly that war should be stopped, do not present any practical plan for stopping it.

"If the pacifists had ever presented even one practicable plan for stopping war, the world would have seized it greedily, and the pacifists would have conferred an incalculable benefit on mankind. But they have never presented a single really constructive plan, and the result is that they have never contributed an iota to the preservation of peace.

"On the contrary, the net result of their activities has been contrariwise for two reasons:

"1. Since the tendency of wealthy and commercial nations has always been toward effeminacy and away from war, while the tendency of poor and aspiring nations has always been to make war against them as the shortest road to wealth and power, the pacifists, by preventing their nations from being prepared, have supplied the poor and warlike nations with exactly the conditions that these nations were waiting for. The pacifists of Great Britain and France, by preventing reasonable preparedness in their countries, actually, though unintentionally, tempted Germany to make war upon their countries. Therefore, the pacifists contributed at least one-half of the causes of the war.

"2. Furthermore, by continually obstructing the efforts of those who have endeavored to keep the wealthy nations reasonably prepared, the pacifists have made their own nations so weak that, when the war finally fell uopn them, those nations lost immeasurably more both in blood and in money than they would have lost otherwise. In other words, the pacifists have made war not only more probable, but more terrible.

"The greatest danger to the American flag is not communism, because that is an open defiance that can easily be met. The greatest danger is that miscalled pacifism which is softening the fibre of the nation and making it increasingly difficult for our patriotic men and women to do their duty; their duty of maintaining a continuous preparedness to protect at all times, and in all places, under all conceivable circumstances—the American flag."

FOURTH OF JULY IN RETROSPECTION

Defense Day, 1925, had a double significance inasmuch as it was set aside for the annual Defense Day test. While the decision to hold a Defense Day test on July Fourth, in accordance with the wishes of President Coolidge, came

rather late and interfered somewhat with the participation of several states in the exercises, yet on the whole the results seem to have been quite satisfactory.

In some localities there seems to be a fairly well founded objection for using July Fourth for Defense Day purposes. However, it seems to us that it is particularly fitting that the anniversary of our nation's birth should be set aside, in part at least, for a check up on the measures available for defending the institutions for which our forefathers gave so much. It is merely a revival of the custom, prevalent in the early days of our national existence of using Independence Day as Muster Day, which after all is the real purpose of Defense Day.

It appears to be the habit of the American people to be indifferent in a public way to some of the deeper sentiments of life. At least viewing the situation from the surface one is inclined to believe that as a nation we are growing unappreciative of our nation's blessings and getting farther and farther away from the idealism of our forefathers who made Independence Day possible. When one contemplates the flagrant violations of our laws, the seeming corruption of our judiciary, the lack of prompt justice to criminals, the indifference on the part of the average American citizen in the matter of law enforcement, one is inclined to grow faint hearted and conclude that something is striking at the very foundation of our government and sapping the vital forces which have made America the wonderful nation that it is. Then, when one has reached this period of mental depression along comes something that brightens the horizon and demonstrates that after all our people are fundamentally sound, that on the surface there is an apparent indifference, yet it is an exaggerated effort to cover up the real sentiment that lies within every American breast.

The Associate Editor has the good fortune to live in Oak Park, one of the many beautiful suburbs of Chicago. This village is one that is typically American in community spirit and civic pride. On July Fourth the Chamber of Commerce arranged for a free program followed by fireworks display to be given in the High School Memorial Stadium, which has a seating capacity of eight thousand five hundred and which could accommodate approximately half the people gathered there to observe the day.

After a concert by the Siloam Commandery Band of Oak Park and while the bugle blew retreat, this audience of approximately fifteen thousand stood at attention while a detail from the American Legion lowered the stars and stripes. The Declaration of Independence was read and a short Defense Day talk given by a prominent Oak Park citizen.

One cannot help but be thrilled by the prompt and eager response of that large crowd to the beautiful sentiment of the day. Such a sight was indeed reassuring and certainly will serve as an inspiration during the coming year whenever doubt begins to creep in and one thinks of the dangers besetting our government, due to the apparent indifference of our citizens to the wonderful opportunities of this land of ours. One cannot help but feel that our forefathers were divinely inspired in the construction of the machinery of our government and the thought came to our minds that gratitude for our country and for the many blessings and privileges of living under the folds of the stars and stripes should become a changeless habit in our lives and not simply on an occasional service or season when we seem especially favored for some special blessing.

Defense Day should be a day of renewed pledges of allegiance to our flag and to the republic for which it stands:

a day on which every American citizen should highly resolve to so live and discharge his duties of citizenship that he may be more and more worthy of being called an American citizen.

WM. E. KENDALL, M. D.

NARCOTIC ADDICTION

Editor, Chicago Medical Recorder:

Captain Hobson, as president of the International Narcotic Education Association, has officially requested me to introduce a bill in Congress for an appropriation for a fitting participation in the conference by the Government of the United States as host to the governments of other lands. This I have agreed to, as it will be in pursuance of the resolution adopted at the Geneva conference committing the nations to a policy of narcotic education.

It is hardly necessary to point out to you that this problem is challenging all nations and has become serious and urgent. Take the situation in America for instance. In 1919 the special survey of the Treasury Department reported the number of addicts in the United States as exceeding 1,000,000, and increasing. In the February, 1925, issue of *Current History,* Fred A. Wallis, commissioner of corrections, New York City, says, "Of all the plagues visited upon our land, drug addiction is by far the most horrible and the most deadly * * *. The increase in narcotics has been accompanied by an increase in crime * * *. Heroin changes a misdemeanant into a desperado of the most vicious type * * *. Sixty per cent of the inmates in all penal and correctional institutions of New York city are users or sellers of drugs * * *. There must be in the greater city of New York close to 200,000 drug addicts of the underworld type * * *. There are many more of whom nothing is officially known." The health officer of Chicago, investigating cause of crime there, found drug addiction alarming among the youth of both sexes. Last year the assistant U. S. attorney general reported that more than 40 per cent of all prisoners being convicted in federal courts were addicts and that the number is increasing. Judge McAdoo of the New York City courts estimates that of the thousands of addicts who have appeared before him, 98 per cent were below the age of 30 and 98 per cent were heroin addicts. The heroin addict is inherently a recruiting agent and soon recruits a gang. The members of this gang in turn soon start recruiting other gangs. I am anxious to learn your sentiments as a representative citizen who reflects and helps to create public opinion. It would be gratifying to hear from you, that you and those whom you contact, approve the proposed conference, and, in principle, the proposed bill for the participation of our government, and, that in your columns you will cooperate to make the conference a success of lasting benefit to humanity.

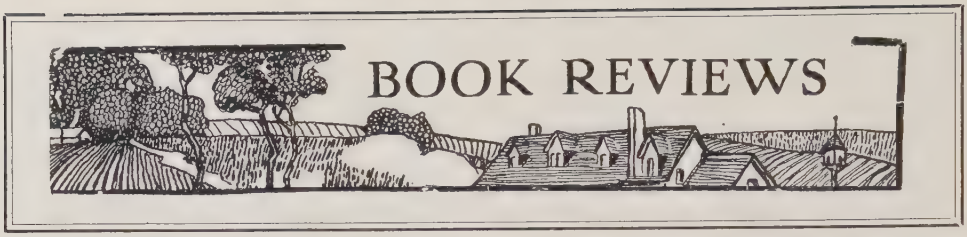
Sincerely yours,

WALTER F. LINEBERGER, M. C.

Ninth District, California.

Opinion of Public Health Institute

Following the receipt of many requests for an opinion of the Public Health Institute of Chicago, the official Bulletin of the Chicago Medical Society (June 20) states that it is an unethical institute in every sense of the word; that the physicians who work for the institute are not members of the Chicago Medical Society, "some by choice and some by expulsion," nor has the institute any well known genito-urinary specialist on its staff; that the institute is a private corporation practicing medicine and charging fees; that it uses full page advertisements as a means of procuring business, and that physicians who connect themselves with the institute will be brought before the ethical relations committee of the Chicago Medical Society.



THE MEDICAL ASPECTS OF CHEMICAL WARFARE. By Edward V. Vedder, Lieut. Colonel, M. C., U. S. A., with a chapter on the Naval Medical Aspects of Chemical Warfare by Duncan C. Walton, Lieut. Commander, M. C., U. S. N. Williams & Wilkins Company, Baltimore, Md. Price $6.50.

Since the World War there have been very few books written on the subject of Chemical Warfare. That there has been need of such books is shown by the many inquiries made by the officers of the Chemical Warfare Service regarding literature containing information on this important subject.

"The Medical Aspects of Chemical Warfare" by Edward B. Vedder, Lieutenant-Colonel of the Medical Corps, U. S. Army, with a chapter on "Naval Medical Aspects of Chemical Warfare" by Duncan C. Walton, Lieutenant-Commander, U. S. Navy, is a book which meets the need of the student of Medical Warfare Service in a most admirable manner. This work deals with the technical side of Chemical Warfare in a manner which is easily read, the line of thought easy to follow and is not so technical but that it is appreciable by the average medical officer.

The early part of the book is taken up with the history of Chemical Warfare with a short discussion of the difficulties encountered during the organization of the gas service with the American Expeditionary Forces. There is a short chapter on physics as applied to Chemical Warfare, a review of the elementary chemistry of the service; a chapter on meteorology, finally classifying the various gases with a discussion as to the manner in which each affects the human body and the treatment for various gas casualties.

It is only recently that the Navy has awakened to the importance of the Chemical Warfare Service. However, with the development of the air service it has been shown that the Navy must be prepared to combat the effects of poison gases dropped from airplanes. Lieutenant-Commander Walton of the Medical Corps, U. S. Navy, discusses the Naval medical aspect of Chemical Warfare in a very instructive style and takes up the individual gases most likely to be used against the Navy, with a discussion as to the best methods of defense.

It is the opinion of the reviewer that the book does not contain sufficient number of illustrations. Chemical Warfare affords an unusual opportunity for striking illustrations which serve to teach valuable lessons of this service and it is suggested that future additions be more profusely illustrated.

The reviewer had the privilege recently of attending a two weeks' course of training at Edgewood Arsenal, Edgewood, Maryland, where Colonel Vedder and Commander Walton were stationed in charge of the medical research laboratory at Edgewood Arsenal. He was very much impressed with the earnest spirit shown by the two authors and it is his personal opinion that this book will furnish a very valuable contribution to medical literature on Chemical Warfare Service and no doubt will be used as a

standard text book for some time to come.

Modern Surgery, General and Operative. By J. Chalmers Da Costa, M. D., LL.D., F. A. C. S. Samuel D. Gross, Professor of Surgery, Jefferson Medical College, Philadelphia, Ninth Edition, Revised and Reset. Philadelphia and London: W. B. Saunders Company. 1925. Cloth, $10.00 net.

This is one of the books in which a reviewer's task consists only in announcing a new edition. The Da Costa book of some 1,500 pages is, in our judgment, the best single volume work on surgery in existence. It is authoritative throughout, a model book in every sense of the work. It is useful to both the surgeon and physician and is a splendid textbook for the student.

It is hardly necessary to call attention to the various revisions or the new additions in this book. It suffices to say that the ninth edition of Professor Da Costa's work on "Modern Surgery" is up to date from the first page to the last, a super-excellent book in every respect.

Abt's Pediatrics. By 150 specialists. Edited by Isaac A. Abt, M. D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes. Now ready—Volume VII containing 879 pages with 70 illustrations. Philadelphia and London: W. B. Saunders Company. 1925. Cloth, $10.00 per volume. Sold by subscription.

The 7th volume of Abt's Pediatrics is before us and is another most valuable addition to this monumental work. These volumes represent the most advanced pediatrics of the present day. We have, in previous issues, already called attention to its many merits and to its list of distinguished contributors. We can add nothing more to what we have already said about it. The contributors to the 7th volume are Professor K. D. Blackfan of Harvard, Professor C. D. Kamp of the University of Michigan, Professor W. P. Lucas of the California Medical School, Professor Frank C. Neff of the University of Kansas, Professor L. J. Pollock of Northwestern University, Professor Ernest Sachs of the Washington University School of Medicine, St. Louis, Professor Smith Ely Jelliffe of the Post Graduate Medical School, New York, Professor E. L. Kenyon of the University of Chicago, Professor Theodore C. Hempelmann of Washington University, St. Louis, Professor George B. Hassin of the University of Illinois, and Professor Ralph C. Hamill of Northwestern University.

The subjects treated refer to diseases of the nervous system, infantile cerebral palsies, chorea convulsions, absess of the brain, tumors of the brain, psychopathology of childhood, etc.

No one could feel himself competent to practice pediatrics without Abt's splendid system of Pediatrics in his library.

1924 Collected Papers of the Mayo Clinic and the Mayo Foundation, Rochester, Minnesota. Octavo of 1331 pages, 254 illustrations. Philadelphia and London: W. B. Saunders Company. 1925. Cloth, $13.00 net.

Volume sixteen of the well known collected papers of the Mayo Clinic lies before us, and it goes without saying each volume is of greater interest and more value than the one preceding it. It will be impossible to enumerate all the contributors who comprise practically all the teachers in the Mayo Clinic and Foundation. Of course, not all the papers are published in full. Many are only abstracted, but the volume as a whole is beyond praise. It is only neces-

sary to state that the book covers all diseases or interesting cases of the alimentary tract, uro-genital organs, ductless glands, blood and circulatory organs, the surgery of the trunk and extremities, affections of the brain, spinal cord and nerves and a large number of miscellaneous papers on various topics. Every progressive surgeon is a regular subscriber to the Mayo Clinics, and those who are not, should be.

Physical Diagnosis of Diseases of the Chest. By Joseph H. Pratt, A. M., M. D., and George E. Bushnell, Ph. D., M. D. Philadelphia and London: W. B. Saunders Company. 1925. Cloth, $5.00 net.

We take great pleasure in adding our cordial endorsement to a new book on physical diagnosis by Drs. Pratt and Bushnell. It is eminently practicable for the general practitioner as well as for the student and is largely based on experience gained in the instruction of medical officers in physical diagnosis at the medical reserve officers' camps during the late war.

It is astonishing how little attention has been paid to physical diagnosis by many physicians, and this book attempts most successfully to teach them how, why, and wherefore. The book is well illustrated and written in a particularly attractive way, making the subject matter both interesting and easily understood. We cordially recommend this book to the general practitioner and to the student as well.

Approaching Motherhood. Questions and Answers of Maternity. By George L. Brodhead, M. D., Visiting Obstetrician, Bellevue and Allied Hospitals, Harlem Division, New York City. Paul B. Hoeber, Inc., New York City. Price $1.25.

This is really a very good book to give mothers of ordinary intelligence. It will answer many of the questions they want to know such as the signs of pregnancy, duration of pregnancy, when to visit a physician, discomforts and complications of pregnancy, exercise and diversion, diet, preparation for the confinement, convalescence, nursing and last but not least, the baby.

For the purpose intended it is very excellent indeed, and we congratulate Dr. Brodhead for this timely book. In spite of the noise we hear about birth control, maternity still seems to remain fashionable, and a book of this kind will help to lighten the discomforts of the mother.

The Medical Clinics of North America. (Issued Serially) one number every other month. Volume VIII Number VI, (Boston Number—May, 1925.) Per clinic year (July, 1924, to May, 1925.) Paper $12.00; Cloth $16.00; Philadelphia and London: W. B. Saunders Company.

The May, 1925, number is known as the Boston Number and has many well known clinicians among its contributors, such as Professors E. P. Joslin, E. A. Locke, J. N. Lovell Morse, W. H. Roby, and others, of Harvard Medical School, S. A. Levine of Peter Bent Brigham Hospital, Charles W. McClure of the Evans Memorial Hospital, H. B. Sprague of the Massachusetts General Hospital.

Among the clinics may be mentioned congenital heart diseases, gout, corinary occlusions, septic ulcer, heart block, diabetes, and many other interesting clinics.

The Surgical Clinics of North America. (Issued serially, one number every other month.) Volume V, Number II (New York Number—April, 1925.) Per clinic year (February, 1925, to December, 1925.) Paper,

$12.00; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company.

The April, 1925, number is known as the New York Number and has among its well known contributors the names of the following prominent surgeons: Professor F. H. Albee, professor of orthopedic surgery New York Post Graduate Hospital, George Gray Warren, professor of obstetrics and gynecology Cornell University, A. O. Whipple, professor of surgery Columbia University, John F. Erdmann, professor of surgery New York Post Graduate School, Byron Stooky, associate in neurology Columbia University, and several others.

Among the interesting clinics we note the following: Suspected ectopic gestation, tumors of the breast, duodenal ulcer, Graves disease syndrome, cancer in general, extra medullary tumors of the spinal cord, empyema, and a large number of other most interesting clinics.

Practical Clinical Psychiatry for Students and Practitioners. By Edward A. Strecker, A. M., M. D., Medical Director, Pennsylvania Hospital, Department for Mental and Nervous Diseases; and Franklin G. Ebaugh, A. B., M. D., Professor of Psychiatry, University of Colorado; Illustrated, P. Blakiston's Son & Co., Philadelphia. Price $4.00.

We are indebted to professors Edward A. Strecker and Franklin G. Ebaugh for a most valuable book on practical clinical psychiatry for the general practitioner. It is a most readable book, easily understood, and it covers the subject matter in a very complete and thorough manner.

As the authors well state in the preface, every physician should cultivate that attitude which comes from some knowledge of mental diseases and which might be termed the psychological point of view. With the psychological view point comes the ability to treat not only the physical symptoms of the patient, but also his whims and peculiarities, his personality, his mind, and, in fact, the entire patient. We also learn from the preface something that we did not know, and that is that there are more beds in public hospitals devoted to those who are mentally sick than to all other classes of the physically sick combined.

The authors believe that a better knowledge of mental diseases in the very beginning would lead to more satisfactory results in the way of cures than our present method of turning them over to a specialist when the mental diseases have progressed tolerably far. We earnestly recommend every practicing physician who wants to keep abreast of the times to get a copy of this book, particularly now when there are so many nervous wrecks and so many people who indulge in alcoholic excesses in spite of prohibition, that we may confidentially look forward to a vast increase in the cases of psychoneuroses.

Heart Disease in Illinois

In the last twenty years the mortality from heart disease in Illinois has increased 145 per cent. The number of fatalities in 1902 was 4,491 and in 1923 it was 11,989. The rate per hundred thousand of population increased from 90 to 176 during the same period, and heart disease has moved from the third place on the list of causes of mortality at the opening of the century to first place. According to the state department of health, heart disease takes nearly two lives to each one of its nearest competitors.

Deaths from Epidemic Encephalitis

There have been sixteen deaths in Michigan in the first four months of this year due to epidemic encephalitis, and thirty-seven cases reported. Compared with that of the last two years, this incidence is rather high. Six more cases have been reported since May 1. This disease has been reportable by law in Michigan since 1921.

Dr. Lewis Honored

A dinner was given at the Drake Hotel on June 23rd in honor of Dr. Dean D. Lewis, Dr. James B. Herrick presiding. The following addresses were made:

Dr. Lewis as a Surgeon—Dr. Allen B. Kanavel.

Dr. Lewis as Seen by an Outsider—Dr. G. Carl Huber.

Dean, the Athlete and Good Fellow—Alonzo A. Stagg.

Dean Lewis, the Man—Dr. Vernon C. David.

Dr. Lewis as a Surgeon—Dr. Allen B. Dick.

Response—Dr. Dean D. Lewis.

Editor Resigns

Joseph J. Weber, for six years editor of the Modern Hospital, has resigned to become director of Grace Hospital, New Haven, Conn. Mr. Weber formerly was associate director of the Boston Dispensary, Boston, and executive secretary of the committee on hospitals of the New York State Charities Aid Association.

Endorse Lye Legislation

Charles W. Dunn, general counsel of the American Grocery Specialty Manufacturers' Association, recently informed the committee on lye legislation of the American Medical Association that the manufacturers of lye unqualifiedly endorsed the legislation proposed by the American Medical Association and pledged the cooperation of the lye section in the enactment of this legislation and in the education of the public against the accidental consumption of lye.

Tuberculosis Mortality

There are now fewer than 100,000 deaths from tuberculosis annually in the United States, whereas a few years ago there were 150,000 for a smaller population. A statistical analysis by the New York Tuberculosis and Health Association states, however, that there are still twelve states and the District of Columbia which in 1923 had a tuberculosis death rate of more than 100 per hundred thousand population. Four of these, however—Arizona, New Mexico, Colorado and California—should be excluded from this list on account of the many nonresidents who go there for treatment. There are remarkably low rates in Kansas (40), Utah (36) and Nebraska (33). The analysis shows that in thirty-two states in 1923 there was a decrease in the tuberculosis death rate and in thirteen states and the District of Columbia there was an increase, notably also in Arkansas, Florida and Indiana. There are more than 66,000 beds for tuberculosis patients in 714 institutions in the United States. In this total there are seventy-five federal institutions with 11,458 beds, first for ex-service men, and secondly, 584 beds in eleven institutions for Indians.

Training Schools for Colored Nurses

The Hospital Library and Service Bureau of the American Conference on Hospital Service has just completed a study of the educational facilities for colored nurses. Questionnaires were sent to the 1,696 accredited schools of nursing in the United States, forty-eight state boards of nurse examiners, 933 city and county health officers, various national associations, and a special list of institutions. The report comprises two volumes, copies of which have been placed on file with the American Nurse Association, National Organization for Public Health Nursing, and the National League of Nursing Education. There are fifty-four accredited schools for nurses which admit colored students, sixty-six hospitals which have colored graduate nurses, fifty-nine departments of health which employ colored nurses, and nineteen visiting nurses' associations which use colored nurses. There were twenty-one hospitals among the 1,696 institutions reported on which used colored interns.

The Vanishing Family Doctor

At a convention of physicians in Chicago a speaker vigorously attacked modern med-

When You Prescribe

Gray's Glycerine Tonic Comp.

(*Formula Dr. John P. Gray*)

and your prescription is filled by some cheap, worthless substitute which some druggists buy in bulk, your efforts are defeated and your patient's condition is jeopardized. You owe it to yourself as well as to your patients to make sure that they get

The Original "Gray's"

which has 35 years of faithful service to the medical profession as its guarantee of

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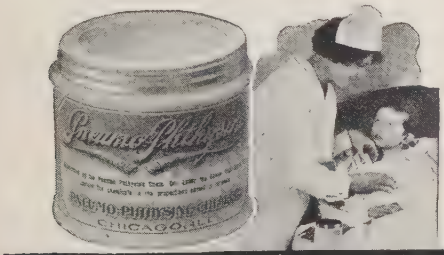

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Prepared to care for emergency Cases day or night. A full Corps of experienced Physicians and Nurses always in attendance. Affiliated with the Northwestern Medical School. We solicit the co-operation of all Physicians.

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Phones Victory 2040 and 2041.

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LAXATIVE and ELIMINANT

Efficacious in all conditions where intestinal sluggishness arising from functional derangement of the liver and portal circulation is a factor. Sal Hepatica cleans the entire alimentary canal.

Samples for Clinical Purposes

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New York

ical education as the cause for the disappearance of the family doctor.

This education has become very expensive. It consumes more time than is given to schooling for any other profession. "As a result," said the speaker in Chicago, "medical graduates are preferring the better rewarded careers of specialists to ordinary service for the ordinary sick."

The general public is in no position to say whether this is the real reason for the loss of its old friend and guide. It only knows that there are very few family physicians left, that the service these doctors supplied is not now provided and that where a great deal of helpful advice, sympathy and aid went along with medical treatment the patient now gets perhaps improved medication, but no ear into which to pour long accounts of troubles.

Probably, specialization would have developed in medicine whatever the doctors' education might have been and whether it was cheap or costly. For that has been the trend in nearly every profession or occupation. The world encourages concentration of endeavors. It rewards specialization. It makes the life of the specialist a fairly easy and comfortable one and sometimes very luxurious.

The public derived great benefits from the institution of the family doctor. But was the public properly grateful? It called the doctor out of a warm bed to administer to ailments that very frequently were far from serious. It caused him to ride and drive long distances in any sort of weather. It assumed that he had no claim to leisure and very little to the right to sleep. There are no records to show that the family doctor grew very rich from his continuous and unselfish labors.

So while it is highly desirable that family physicians should come back in their old numbers there is not much likelihood that they ever will. The young medical graduate is willing to admire an elderly family physician and yet not see any pressing reason for following in his footsteps.—The Newark (N. J.) Star.

Summer Training for Army Reserve Officers

Reports received in the Surgeon General's Office indicate that at least 1,200 physicians will attend the four army camps chosen by the War Department for special training of medical reserve corps officers. It is estimated that the following number of reserve officers of the medical corps will secure training at these camps:

Medical Field Service School, Carlisle Barracks, Pa.	800
Fort Snelling, Minn.	200
Fitzsimons General Hospital, Denver	60
Camp Lewis, Washington	150

In addition, a number of reserve officers of the medical department will be ordered directly to active duty for fifteen-day training periods at many of the summer citizens' military training camps. The Surgeon General's Office is highly pleased that so large a number of physicians will participate.

Fund for Library of Ophthalmology and Otolaryngology

The St. Louis Eye, Ear, Nose and Throat Infirmary has donated to the St. Louis Medical Society almost $3,500 in securities, to be known as the St. Louis Eye, Ear, Nose and Throat Infirmary Fund, the income of which will be used equally to maintain the libraries of the departments of ophthalmology and otolaryngology. The infirmary also gave to the St. Louis Medical Society $350 in Liberty Bonds to aid in the completion of the Medical Library Building.

Toxin-Antitoxin in Detroit Schools

During the last four years, the Detroit Department of Health has offered toxin-antitoxin to school children in the kindergarten and first grade. In the first year of this period 6,167 children completed the course of treatment, and last year 8,612 children completed the course. During the entire four years, 20,448 children have completed the treatment. There were 334 deaths from diphtheria in Detroit in 1921, and 162 in 1924.

Detroit Offers Auditorium to County Society

The mayor and common council of Detroit have approved the appropriation for the first unit of the new buildings for the Detroit College of Medicine and Surgery, and offered the Wayne County Medical Society the use of the auditorium of this new building for its meetings and exhibits. The offer has been accepted by the council of the society.

ENDOCRINE REMEDIES

BY A RELIABLE HOUSE

ORGAN-O-TONES No. 19 (Thyro-Pituitary Co.)

Thyroid substance	1/2 gr.	Apocynum (P. E.)	1/4 gr.
Pituitary (whole)	1/4 gr.	Organotones No. 12 q. s.	7 grs.
Phytolaccin	1/2 gr.		

Prescribe: Rx—One to two capsules three or four times daily.
Indications: Obesity.
Remarks: The thyroid and pituitary both have to do with metabolism. Hypofunction of either results in decreased and sluggish metabolism. By combining these glands with phytolaccin, apocynum and Organotones No. 12, very satisfactory results have been obtained.

ORGAN-O-TONES No. 4 (Ovarian Co.)

Ovarian substance	3 grs.	Thyroid substance	1/10 gr.
Pituitary (total)	1/8 gr.	Organotones No. 12	2 grs.

Prescribe: Rx—Organ-o-tones No. 4—Ovarian Co. One capsule four times daily, after meals and at bed time.
Indications: Amenorrhea; Dysmenorrhea; sexual apathy; sterility; irregularities at puberty and the menopause; malnutrition accompanying under physical development of young girls.
Remarks: One of the most effectivee of the endocrine remedies. Due to the fact that dysovarianism is more often of thyroid or pituitary origin than ovarian, this formula has proved beneficial in cases where ovarian substance alone had been tried without results.

Write us for Endocrine booklet.

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3727 Laclede Avenue **St. Louis, Missouri**

TESTOGAN

For Men

THELYGAN

For Women

Formula of Dr. Iwan Bloch

After eight years' clinical experience these products stand as proven specifics

INDICATED IN SEXUAL IMPOTENCE AND INSUFFICIENCY OF THE SEXUAL HORMONES

They contain SEXUAL HORMONES, i. e., the hormones of the reproductive glands and of the glands of internal secretion.

Special Indications for Testogan:

Sexual infantilism and eunuchoidism in the male. Impotence and sexual weakness. Climacterium virile. Neurasthenia, hypochondria.

Special Indications for Thelygan:

Infantile sterility. Underdeveloped mammae, etc. Frigidity. Sexual disturbances in obesity and other metabolic disorders. Climacteric symptoms, amenorrhea, neurasthenia, hypochondria, dysmenorrhea.

Furnished in TABLETS for internal use, and in AMPOULES for intragluteal injection.

Prices: **Tablets, 40 in a box, $1.75**
100 in a box, 3.50
Testogan Ampoules, 12 in a box, $2.50
Thelygan Ampoules, boxes of 12, 2.50

EXTENSIVE LITERATURE ON REQUEST

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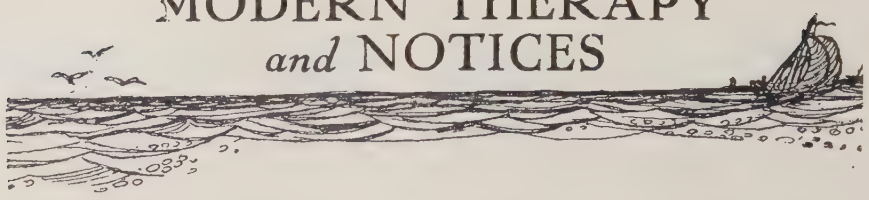
MODERN THERAPY *and* NOTICES



SPECIFIC URETHRITIS

It is safe to say that no single remedy, for collateral use in the treatment of this infection, has been as highly eulogized as Sanmetto. The advantages it holds over the oils, balsams and G-U stimulants are many, principal of which, however, is the entire absence of untoward symptoms. Oil of Sandalwood, Copaiba and the like are at times extremely irritating. The first mentioned often gives pain in the kidney regions and this calls to mind the necessity of guarding against so-called substitutes of Sanmetto made with the *"oil"* and boiled down solid extracts. *It is always a safe rule to begin with a bottle of genuine Sanmetto as soon as the patient presents himself with an acute gonorrheal infection and to continue its use throughout the entire treatment.* This method will keep the mucous membranes subdued even under stress of the necessary local treatment.

TONGALINE

"The salicylates have long been regarded by the profession as potent antirheumatics, whose efficacy is unapproached by any other known medicine in the treatment of neuralgia, rheumatism, sciatica and other neurotic lesions. Tongaline, from the character of the ingredients, is bound to possess special alterative and eliminative action, with positive affinity for the excretory system of glands, necessarily producing a thorough elimination of the toxic and morbific products of the system through the various emunctories. For rheumatism and gout, sciatica and lumbago, it is the remedy par excellence, its action being absolutely invaluable. In these diseases Tongaline thoroughly eliminates the toxaemia which, under other treatments, seems ever present, hindering convalescence and producing relapses."

THE NEEDS OF THE AGED

It is a well known physiologic fact that the aged individual reverts, to a considerable degree, to the childish type. The pneumonia of the aged is of the bronchial type; the mental processes gradually become more or less juvenile when senility supervenes. As many a youngster needs gentle stimulation of appetite and nutrition, so also the oldster requires similar aid and assistance. Appetite is often the first to fail, and an insufficient digestive capacity soon follows. Simple foods are best both in childhood and old age, and the digestive and absorptive capacities of the aged individual should never be unduly burdened. Milk, cereals, green vegetables and non-acid fruits are indicated, but unfortunately, under present day commercial conditions, such nutriment is often devoid of the important mineral and oxidizing elements needed to supply such blood building substances. Gude's Pepto-Mangan contains the ever essential iron and manganese to encourage failing appetite, to supply the needed oxygenating and oxidizing material, and to aid in the formation of the lacking red cells and hemoglobin without which

Ideal for Recuperation

Why not French Lick Springs for your patients requiring rest and a change of atmosphere? The environment here is ideal for rest, recuperation and healthful pastime. Your patients will be cared for just as you indicate as to diet, exercise and treatment.

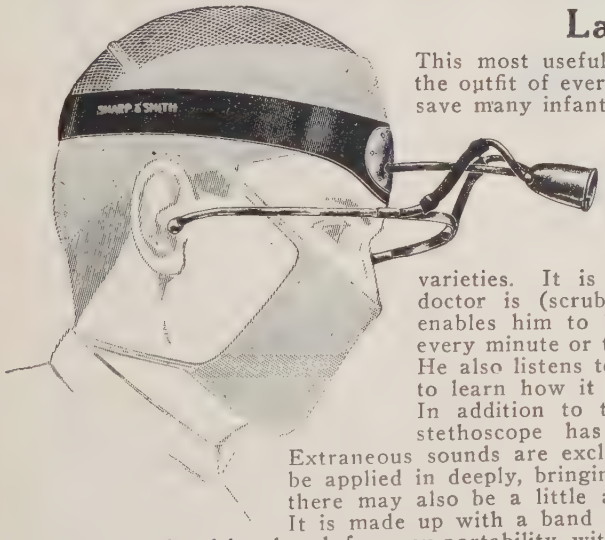
Pluto Water, bottled at French Lick, is a dependable, efficacious eliminant of known potency and unvarying standard. On sale at all drug stores.

Pluto sample and literature to the Medical Profession on request.

FRENCH LICK SPRINGS HOTEL COMPANY, French Lick, Indiana

The De Lee-Hillis Head Stethoscope

Latest Model



This most useful instrument should be part of the outfit of every obstetric practitioner. It will save many infants' and mothers' lives.

It was designed especially for use during the second stage of labor of both (spontaneous and operative), but it is even more useful for all the purposes of a stethoscope than the usual varieties. It is worn on the head after the doctor is (scrubbed up) for the delivery and enables him to listen to the fetal heart tones every minute or two without infecting his hands. He also listens to the mother's heart frequently to learn how it is bearing the strain of labor. In addition to this great advantage the head stethoscope has valuable acoustic properties. Extraneous sounds are excluded; by pressure the bell can be applied in deeply, bringing it closer to the fetal heart—there may also be a little audition from bone conduction. It is made up with a band over the top of the head, with a circular fibre head band and, for easy portability, with a ribbon woven strap.

Price, $7.50 Each

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the circulating fluid loses its potency and vitality.

Samples, literature, etc., obtainable from M. J. Breitenbach Co., New York, N. Y.

MULFORD MEDALS

Our readers no doubt remember the dog-team relay race to Nome, Alaska, with Super-Concentrated Diphtheria Antitoxin last February. The drivers knew that the trip was practically impossible, yet they dared death to save diphtheria-stricken Nome. They plunged through trails that would have been impassable had it not been for the courage and instinct of the dogs and the heroism of the drivers.

That heroism has been recognized and commemorated by H. K. Mulford Company, Philadelphia, makers of the Super-Concentrated Anti-toxin. Beautiful gold medals will be presented to each of the nineteen dog-drivers by the H. K. Mulford Company through Governor George Alexander Parks, of Alaska.

When the medals have been completed, the Llewellyn Drug Company, 1518 Chestnut Street, Philadelphia, asked to have them displayed in their window. The window is pictured above. Its attractiveness was shown by the fact that crowds waited impatiently for a sight of the medals and the accompanying bit of the story of that heroic dash through Arctic winter night.

Crowds continued in front of that window for 10 days and many went into the Llewellyn store. Interesting windows are valuable these days, and the Mulford medals made a most interesting and valuable display.

RESEARCH ON THE STABILITY OF MERCUROCHROME SOLUTIONS

The statements of various authors regarding the stability of mercurochrome solutions have been investigated by Loeser, Hamburger, and Konwiser. In experiments extending over a period of nine months, an intravenous solution of mercurochrome, 220, has been thoroughly investigated.

It has been demonstrated that a 1% solution, prepared by the Loeser method, remains stable over a long period of time in hermetically sealed, nonsoluble glass ampoules. At monthly intervals the solution was injected into white rats intravenously, while control animals were injected with a freshly prepared solution. These tests show that no change had taken place in the solution, and that the toxicity had not increased after nine months. Bactericidal tests made with this solution, when six months old, indicated that there was no loss of bactericidal power.

These tests were part of the experimental work of preparing a standardized, biologically tested, stable 1% solution of Mercurochrome, to be offered to the physician in 20cc. ampoules ready for injection. Clinical data and therapeutic references have been gathered for distribution by the New York Intravenous Laboratory, 100 West 21st Street, New York City.

DYSCHEZIA

Dyschezia due to functional causes is promptly relieved, and normal action of the bowels gradually restored by the systematic use of

AGAROL

The rational composition of this exceptional preparation cannot fail to impress the thoughtful practitioner. Every ingredient fills a definite purpose, and in their composite influence so closely duplicate natural conditions that the bowels act normally without the least griping or other objectionable effect.

The more familiar the practitioner becomes with Agarol, the more he will appreciate its superiority to ordinary laxatives. A trial in some intractable case will tell him why.

AGAROL is the *original* Mineral Oil—Agar-Agar Emulsion, and has these special advantages: Perfectly homogenized and stable; pleasant taste without artificial flavoring; freedom from sugar, alkalies and alcohol; no contra-indications; no oil leakage; no griping or pain; no nausea or gastric disturbances—Not habit forming.

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Many Doctors

Are telling patients hot breakfasts can now be prepared in 3 to 5 minutes

If you subscribe to the "hot oats and milk" breakfasts now so widely advocated, we believe you will be glad to know of this new Quaker Oats—Quick Quaker.

We perfected this new Quaker Oats for busy wives and mothers, who, because of limited time, were serving oats too seldom. They cook thoroughly in 3 to 5 minutes. That's as quick as plain toast.

Quick Quaker Oats are the same as regular Quaker Oats. They are rolled thinner and partly cooked. They cook faster; that is the only difference. All that rich Quaker flavor is retained. All the high quality of oats and milling that make Quaker the top brand of the world.

May we suggest that where oats breakfasts are indicated, you will mention this quick cooking feature to your patients.

Standard full size and weight packages—
Medium: **1¼ pounds;**
Large: **3 pounds, 7 oz.**

Quick Quaker
Cooks in 3 to 5 minutes

Quaker Oats
The kind you have always known

You Are Entitled to a Vacation

The Medical Protective Company never takes one

Here is the reason

May 5, 1925.

Dear Sirs:

I am enclosing herewith a copy of a letter which I received today.

As I am leaving on a trip to be gone a couple of months, I shall appreciate hearing from you by return mail. I leave here May 15th.

Thanking you kindly for your prompt attention to the enclosed matter, I am

Very truly yours,

A part of the letter he received

Dear Doctor:

Mrs. ———————— has retained me to present to you her claim for damages arising out of your alleged negligent handling of injury sustained February 16th, 1925.

Our answer

Dear Doctor:

You may rest assured your interests will suffer no jeopardy during your absence and there is no reason why you should postpone your trip.

for
Medical Protective Service
Have a
Medical Protective Contract

The
MEDICAL PROTECTIVE COMPANY
of
Fort Wayne, Indiana

Facetiae Medicorum

Does Mother?

A visitor said to a little girl, "And what will you do when you are as big as your mother?"

"Diet," said the modern child.—Tit-Bits (London).

Oh, Central!

"Heard the one about the dial phone?"

"No, go ahead and unwrap it."

"Doesn't take half so long to get the wrong number."

"For goodness' sake!" murmured the co-ed as she pulled down her skirt.—Sun Dial.

Growing Old

Mrs. Murphy was in tears, and her friend, Mrs. Casey, was seeking to comfort her.

"What's th' matter, Maggie" she asked sympathetically. "Why are ye cryin', now?"

"Oh, dear, oh, dear!" sobbed Mrs. Murphy. "Me poor Pat is a-failin'. Why, the dear man bate me up this mornin' an' he hardly blacked me eyes at all, at all."

Call the Censor

(Ad in Los Angeles Illustrated News)

ICE SKATING—First leg of the Ladies Most Graceful Skater for the Marton Gold Trophy.

Depends On

The Runt: "Could you love a man who is short?"

The Gal: "I don't know. How much?"

No Fatigue Uniforms, Though

(Ad in Pontiac (Mich.) Daily Press)

FOR SALE—Row boat. Will hold six persons, steel ribbed and in good shape.

A Friendly Warning

(Ad in the Omaha Daily News)

THIS WON'T LAST LONG. NEW 4-ROOM BUNGALOW.

Also Accommodating?

(South Carolina Weekly Market Bulletin)

WANT—Collie or bull pup, must be pure and reasonable.

D&C LAKE LINES

WATERWAY *Vacations*

MAKE YOUR VACATION *a* HEALTH *investment*

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MACKINAC ISLAND
The Summer Wonderland

DETROIT

CLEVELAND

BUFFALO

NIAGARA FALLS
America's Scenic Wonder

Mackinac Island, the land of rest and beauty, is calling to every vacationist. It is a summerland of charm and freshness. Plan now to take your vacation via the D. & C. Waterway.

BETWEEN DETROIT and BUFFALO—2 new mammoth liners, "Greater Detroit" and "Greater Buffalo," largest liners of their type in the world, Lv. Detroit 5:30 p. m. and Buffalo 6 p. m. daily, Eastern time. Low rates—$6 one way, $11.50 round trip.

BETWEEN DETROIT and CLEVELAND — the giant liners "City of Detroit III" and "City of Cleveland III" Lv. Detroit and Cleveland daily 11:30 p. m. Eastern time. Fare—$3.60 one way, $6.50 round trip. Daylight trips during July and August, Tues., Thurs., Sat. Lv. 10:30 a. m. Eastern time.

BETWEEN DETROIT, MACKINAC ISLAND, ST. IGNACE, and CHICAGO—From June 25th to Sept. 7th liners Lv. Detroit Tues., Thurs. and Sat. 1:30 p. m. Eastern time. Lv. Chicago Mon., Thurs. and Sat. 12:30 noon, Central time.

BETWEEN PORTS	Round Trip Fares including Lower Berths and Meals		
	1 person	2 persons	3 persons
Detroit to Mackinac Is.	$33.25*	$ 64.50	$ 93.75
Detroit to Chicago	68.50**	133.00	193.50
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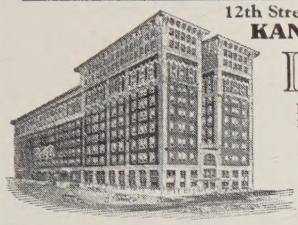

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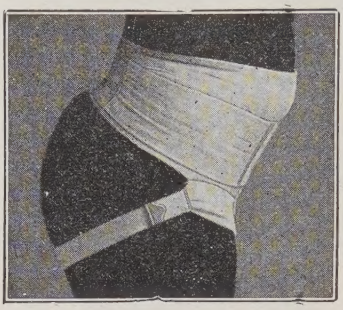

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